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FIRE ENGINEERING

The Journal of the Fire Protection Profession Since 1877

Vol. 90, No. 3 MARCH, 1937 Member A.B.C.—A.B.P.

Seven Firemen Were Injured When the Roof Collapsed During a Fire in a Syracuse University Building Which Swept the Top Floors Early This Year

WASHINGTON, D. C. ADDS ADDITIONAL PIRSCH APPARATUS

● SHOWING FOUR NEW PIRSCH 750-GALLON SERIES PARALLEL PUMPING ENGINES FOR DISTRICT OF COLUMBIA

FOR ORIGINALITY IN DESIGN—PROPER CONSTRUCTION SMOOTH EFFICIENT PERFORMANCE

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IN 1932 the District of Columbia purchased four pieces of Pirsch apparatus—(two Pumpers and two Hydro-Mechanical Aerial Ladder trucks) and in 1936 purchased four additional pumpers making a total of eight Pirsch Fire Engines now in service in the Fire Department of the Nation's Capitol.

PETER PIRSCH & SONS CO. KENOSHA, WIS.

FIRE ENGINEERING, March, 1937. Vol. 90, No. 3. Published monthly by Case-Shepperd-Mann Publishing Corporation, 24 W. 40th St., New York, N. Y. Subscription price: U. S., and Canada, $2.00 a year; foreign, $3; single copies, 25c. Entered as second class matter April 15, 1929, at the Post Office at New York, N. Y., under the Act of March 3, 1879.

The INDIAN MARCHES ON!

VIEWS AND NEWS FROM HERE, THERE AND EVERYWHERE OF THE INDIAN FIRE PUMP IN ACTION

(As the Voice Might Put it at the News Reel)

"DEPENDABLE fire fighters, INDIAN FIRE PUMPS manufactured by D. B. Smith & Co. of Utica, New York, are widely used by rural and city fire departments throughout the United States.

"These tried and proven pumps are unsurpassed for quickly and thoroughly extinguishing troublesome grass, awning, roof or spot fires. They use only clear water—no chemicals, curved to fit back, metal tanks can be carried filled in trucks. Cannot rot or puncture. Need not be propped up to fill.

At the right we see, starting at the top, INDIANS being used to extinguish Florida grass and brush fire, with fire truck at Long Island forest fire, in action at Pennsylvania forest fire, being unloaded by CCC boys, and at the bottom nine INDIANS in rack at Long Lake, N. Y., fire house."

THE INDIAN MARCHES ON!

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We will gladly send on request complete literature describing our line of fire pumps. Testimonials from enthusiastic users are given exactly as sent us. Everyone interested in Fire Fighting and Fire Protection should be familiar with INDIANS.

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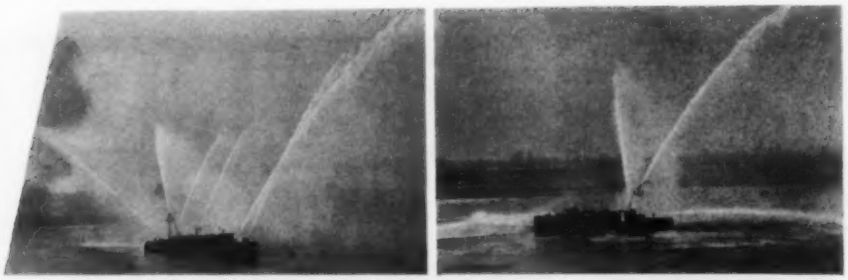

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Pioneers in Modern Diesel Development

You, too, can have-

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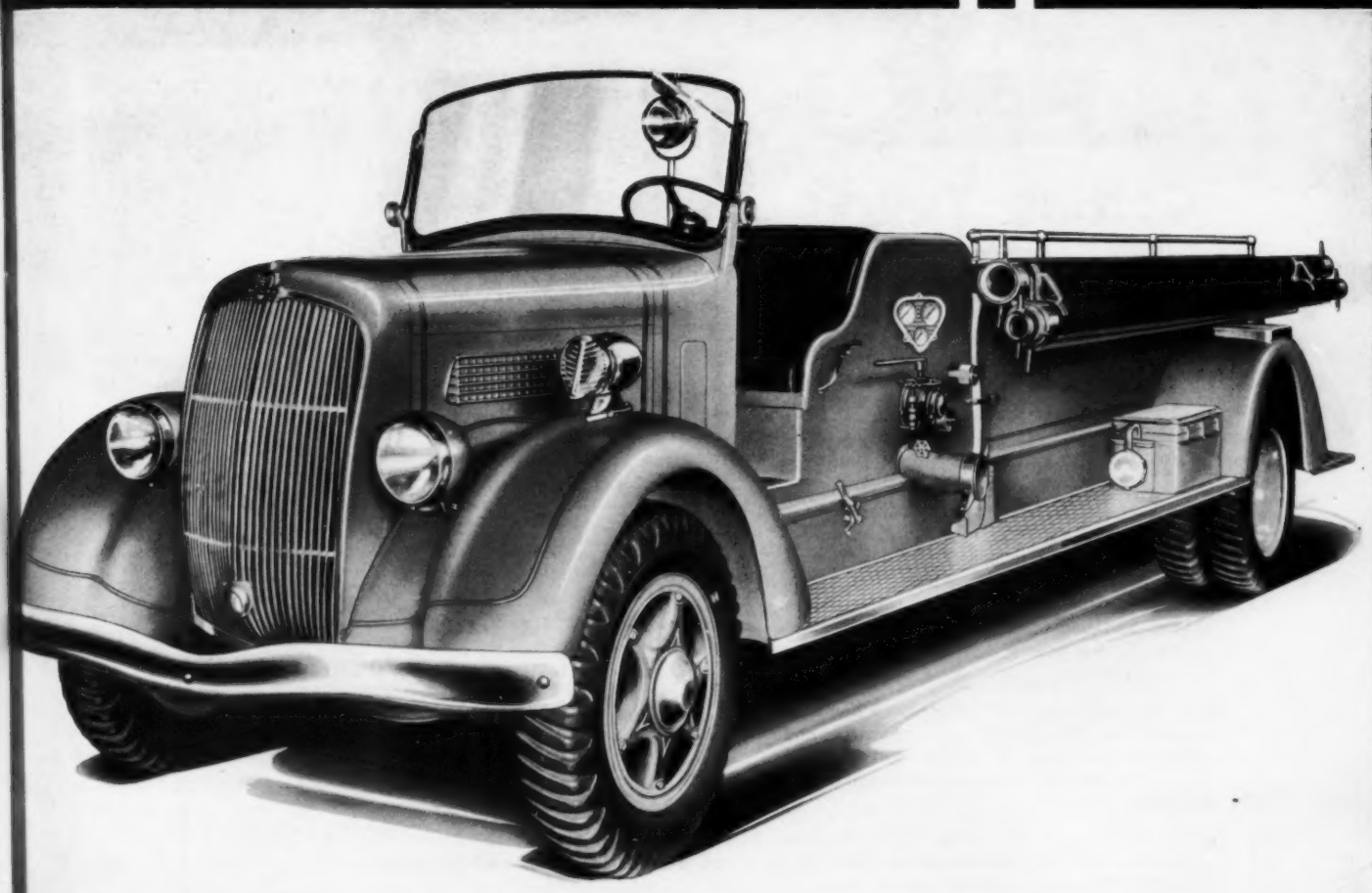

WHETHER you are responsible for the protection of a great city or a small community, there are AHRENS-FOX units exactly suited to your needs, at prices to fit any budget.

SERIES S APPARATUS, for example, has been designed by AHRENS-FOX engineers for Departments requiring Pumper, Hose Car and Booster Apparatus of intermediate capacity, at low cost.

Furnished with AHRENS-FOX two-stage, series-parallel, Centrifugal, or Rotary Gear pumps; liberally powered, and with all parts nicely balanced to provide a long lifetime of strenuous fire duty this SERIES S APPARATUS proudly bears the AHRENS-FOX name-plate.

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FIRE ENGINEERING

The Journal of the Fire Protection Profession Since 1877

ROBERT H. LOCKWOOD
Associate Editor

FRED SHEPPERD
Editor

N. N. WOLPERT
Assistant Editor

Getting Yours?

JUDGING from the unusually large number of "Who makes it" inquiries we are receiving from our readers these days, it seems like every fire department under the sun is getting ready to buy almost every kind of equipment under the sun.

● Fire chiefs are asking about everything from brass buttons to fire station design. Fire equipment dealers, with orders coming in from all directions, are anxious to take on additional items so they can get full advantage of the present situation. Even fire apparatus builders—and they're nearly all figuring on a whale of a lot of new business—are asking our help in locating makers of many of the special and unusual appliances that fire departments are now specifying as equipment for new trucks.

● It really gives us a lot of pleasure handling requests for information on equipment and we do our level best to supply what's wanted even if it does at times require a lot of tall searching.

● There will probably come the time when everything will be advertised in FIRE ENGINEERING, which will of course make it simpler all around for the buyer as well as the seller.

The Publishers

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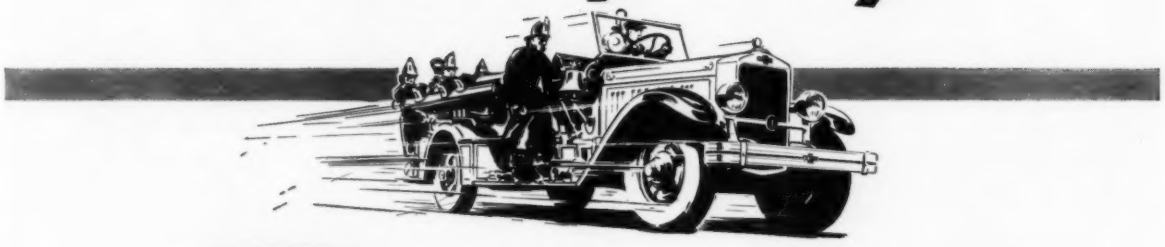
In Every Way



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Fire chiefs from coast to coast have pinned their faith to Goodyear All-Weather Truck Tires for years.

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[**LIFEGUARD* TUBE.** The amazing Goodyear LifeGuard* Tube gives the ultimate safety to fire trucks or department cars. It makes blowouts as harmless as slow leaks. It enables the driver—should a tire let go—to come to a slow, deliberate stop under full control.]

*TRADE MARK REGISTERED

There's a GOODYEAR BATTERY Now!

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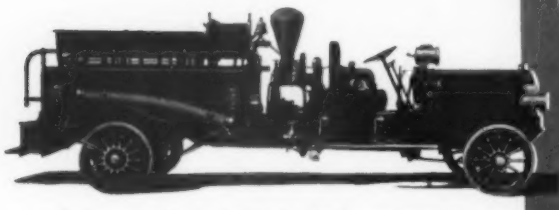
TRUCK TIRES

Mack

The sensation of the year—Mack Type 75, 750-gallon pumper. Modern in performance as in construction.



A pioneer in fire engineering—Mack pumper of 1911.

For 26 Years
MACK *has set the pace in*
FIRE ENGINEERING

EVER since 1911, when the first Mack pumping engine was built, Mack has set the standards for modern fire engineering. The reason? Mack has the facilities to build the finest in fire apparatus—and does!

A Mack purchased today will measure up to the standards of years to come—it has the built-in stamina to answer the bell year after year with unfailing dependability.

When repairs do become necessary Mack is always "on call" with the most complete service facilities in the fire apparatus field. There is a Mack direct factory branch near you—one of 76 strategically located throughout the nation.

No matter how big your requirements, or how small your budget, you can get a Mack that will give the utmost in reliable, low cost fire protection!

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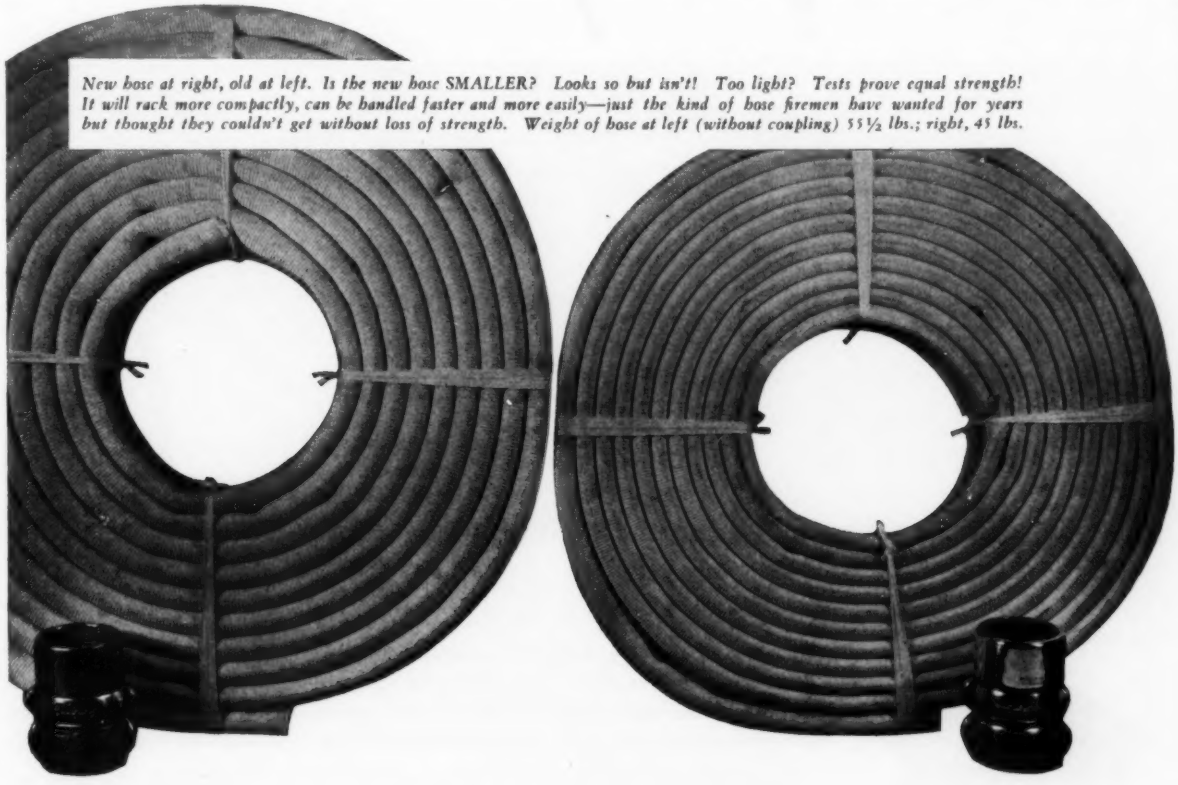
Firemen work faster; flow of water increased; racking and handling easier with this hose



New hose at right, old at left. Is the new hose SMALLER? Looks so but isn't! Too light? Tests prove equal strength! It will rack more compactly, can be handled faster and more easily—just the kind of hose firemen have wanted for years but thought they couldn't get without loss of strength. Weight of hose at left (without coupling) 55½ lbs.; right, 45 lbs.

Longer lengths can be dragged or carried; new hose is 18 per cent lighter—positively no loss in strength

WITH a new close-woven jacket, more filler cords, automatically equalized weaving tension; newly designed whiplash-type cords, Goodrich now produces a fire hose 18 per cent lighter than older types, more flexible, without the slightest loss in strength.

Never before a hose like this

Order a sample length from your Goodrich distributor. Test it; compare it with others; keep it at hand to talk over with other officials when your next purchase is made.

"Highflex" has the same bursting strength as White King (the first grade of Goodrich standard fire hose). Thin wall; size of cords is much smaller than in standard hose; 25 to 35 per cent more filler strands. Filler cords are counter-twisted, jackets are close woven.* Patented Goodrich *end protection* used at couplings; even with the finer, smoother weave, the rubber tube has a special backing to fill the small valleys between cord strands. The B. F. Goodrich Co., Akron, Ohio.

*No "open" type of weave, in which the filler strands are exposed to abrasive wear, is used in any grade of Goodrich hose.

The new Highflex fire hose—by **Goodrich**

We shall appreciate your mentioning FIRE ENGINEERING *when writing advertisers*

What Price Delayed Alarms ?

The Threefold Fire Alarm Box

"A Box a Block" in congested high value districts; not more than 500 feet to the nearest box in closely built residential districts; convenient to every group of buildings, manufacturing establishments, and institutions in sparsely built districts is generally a safe rule to follow.

DEATH by fire is a frequent occurrence, yet most people prefer to believe it cannot come to them, their near relatives, or friends, but is reserved for others. It is preventable and should be unheard of in public institutions. Yet—officials and taxpayers continue to ignore the responsibility which is legally and morally theirs.

Quick response of firemen and apparatus is vital in Life Hazards. Seconds are important when fire is beyond control. The first five minutes are decisive. In nine cases out of ten, the fire can be stopped and life loss avoided within this time. And the property loss will be insignificant.

Panic is a factor to be recognized. Children trying to escape fire in schools, adults in theatres, hotels, and other scenes of grim tragedies have clogged stairways and exits, and have been trampled, suffocated, and burned to death.

No other body of men can so effectively check panic and inspire confidence as the trained municipal fire fighters. A prompt alarm enables them to function. *Delayed alarms are the greatest contributing factor to the fire loss.*

A fire alarm system, constantly and automatically supervised, which transmits the alarm instantly and directly to the fire department and at the same time provides for the orderly evacuation of the building is essential to protection of life and property.

THE GAMEWELL COMPANY

NEWTON UPPER FALLS MASSACHUSETTS

FIRE ENGINEERING

The Journal of the Fire Protection Profession

Volume 90 MARCH, 1937 No. 3

With the Editor

The Fallacy of "Good Enough" Departments

Some city officials still cling to the philosophy that because a Fire Department hasn't let a fire get away and reach conflagration proportions during recent years, it needs no new apparatus nor replacement of obsolete, independable machines.

Such a theory is not only unsound, but exceedingly dangerous as well.

It is not necessarily the single large fire that must be considered, but, instead, simultaneous large fires.

Many departments today are "one fire departments." They are able, with their limited apparatus, to handle a single large fire. But if a second fire were to occur while the department was already engaged in operating at a big blaze, there would be another story to tell.

Recently in a Western city all of the fire apparatus, with the exception of a couple of "light duty" (obsolete, unsafe) machines, were called out to fight a church fire. And the department had all it could do to hold the fire to the one building. Had another large blaze started before this fire had been brought under control, the property loss might have been staggering.

In these days of increasing industrial activity, it is most foolhardy to assume that no strengthening of fire defenses is necessary because no conflagrations have occurred. The busier the factories are, the greater the risk of serious fires. Destruction of a plant may mean its loss forever to a community, either through failure to rebuild or rebuilding elsewhere to be assured of better fire protection.

Before drumming up new industries for the home town, it is better business to first make sure that those already established will not be interrupted or lost by fire. And the only way to accomplish this is to send unserviceable apparatus to the junk heap and replace it with modern machines; if the department is insufficiently equipped in the first place, enough new machines should be added to meet Insurance Schedule Rating Office recommendations.

That is the only sensible plan.

Fred Sheppard

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How Massachusetts Organizes and Administers Its

Zone Schools for Firemen

By M. NORCROSS STRATTON

Co-ordinator, Teacher Training and Supervision, Division of Vocational Education, In Charge of Firemen Training Classes

THE Fireman Training School program is under the control jointly of the Department of Education and the Fire Chiefs Club of Massachusetts, cooperating with a special committee of representatives from various organizations interested in fire prevention.

The Commissioner of Education has delegated the Director of the Division of Vocational Education to assume charge of this program as a service of the Division. The Director assigned the responsibility for the administration of the fireman training schools to the Supervisor in charge of teacher-training. The Fire Chiefs Club is represented by an Advisory Board of Fire Chiefs.

The Advisory Board

The Advisory Board is appointed by the Massachusetts Fire Chiefs Club, and consists of the twelve Chiefs of Fire Departments in the cities and towns in which Zone Schools are regularly maintained. The President of the Fire Chiefs Club is Chairman of the Board. The membership of the present Board is as follows:

Chief Charles L. McCarthy, President, Worcester.
Chief Fred A. Clark, Attleboro.
Chief Daniel B. Tierney, Arlington.
Chief Ray D. Wells, Falmouth.
Chief Edward F. Dahill, New Bedford.
Chief Frank F. Dickinson, Brockton.
Chief James C. Sullivan, Lowell.
Chief Rufus A. Crittenden, Haverhill.
Chief H. C. Root, Springfield.
Chief Thomas F. Burke, Pittsfield.
Chief Selden R. Allen, Brookline.
Chief David A. DeCourcy, Winchester.

This Committee acts in the capacity of an Advisory Board to the officials of the State Department of Education who are responsible for the organization and administration of the program in Massachusetts. All matters regarding fire fighting technique, location of classes, courses of study, admission to classes, and eligibility of instructors, are submitted to this committee for its approval. Reports of the work being done are submitted by the Supervisor in charge at meetings of the Board. Regular meetings of the Advisory Board are held three times each year.

Through the courtesy of Mr. Stratton, FIRE ENGINEERING is enabled to present the following plan for the organization and administration of zone schools for firemen in Massachusetts. The Fire Chiefs' Club of Massachusetts at its annual meeting on May 17, 1933, following a study of the firemen's training programs of twenty-seven states throughout the Union, adopted a plan to provide fundamental training to as many of the firemen in the State as possible.

The plan was particularly designed to reach the small towns and villages where volunteer firemen operate necessarily without the benefit of local drill towers.

Co-operating Agencies

As a first step in organizing the program, agencies interested in fire prevention are contacted, and their cooperation solicited. All such agencies have cooperated and been most helpful in furnishing material and expert advice.

Among cooperating agencies are:

United States Department of the Interior, Office of Education, Washington, D. C., Frank Cushman, Chief, Trade and Industrial Education Service.
Massachusetts Farm Bureau Federation, Howard Russell, Chairman.
Office of State Fire Marshal, Stephen C. Garrity, Fire Marshal.
New England Insurance Exchange, Percy C. Charnock, Agent.
National Fire Protection Association, Percy Bugbee, Assistant Manager.
Factory Mutual Fire Insurance Company.
Massachusetts Fire Prevention Committee, Alfred N. Miner, Chairman.
State Department of Agriculture, Alfred W. Lombard, Supervisor.
Massachusetts State Firemen's Association, M. Joseph Manning, Secretary.

To the Office of Education, Washington, D. C., and to Frank Cushman, much credit is due for both the inspiration which started the development of training schools for firemen in the whole country, and for the inauguration of the work in Massachusetts. The first training course for Drill Masters was conducted by Mr. Cushman at Worcester in 1933.

Administration of Classes

As the work is so largely concerned with training instructors, the administration is assigned to the Supervisor of Teacher-Training, who, with two assistants, supervises the training of instructors, the organization of courses of study, the analysis of evolution and technical subjects, conducts conferences of Drill Masters, organizes and supervises zone schools and classes, and attends to reports, records, assignments, and other matters required for properly conducting the zone schools.

Zone Plan

The plan of organization calls for the establishment of zone schools in central locations which will serve firemen in cities and towns within easy travelling distance. Thirteen cities and towns located in various parts of the State were selected as zone centers. Each center designated has a drill tower, is equipped with modern fire apparatus, and employs a qualified drill master. The State is divided into zones, so that each center serves about the same number of Fire Departments. Each zone is numbered. On Cape Cod three sectional schools at Truro, Chatham, and Hyannis, are conducted in the Falmouth Zone.

The following zone centers have been established in co-operation with the Advisory Board:

1. Falmouth
1a. Truro
1b. Chatham
1c. Hyannis
2. New Bedford
3. Brockton
4. Brookline
5. Arlington
6. Lowell
7. Haverhill
8. Worcester
9. Springfield
10. Pittsfield
11. Fitchburg
12. Attleboro
13. Needham

Classes are conducted upon invitation of the local Chiefs at the fire station in each city or town designated as a zone center, at which the drill tower is located. Class rooms are available in most of the stations. Where there are no class room facilities available, arrangements are made for use of the school rooms in nearby schools. Adequate space for inside work on stormy days, a class room, a dril ltower, and a drill yard, are essential for carrying on the schools.

Equipment

Each zone school has the use of the local fire apparatus, tools, ladders, hose, and other fire equipment used in the department. The local Chief, of course, co-operates in making all this possible. Facilities should be available for ladder work including roof ladders, wet drills, and for inside work on stormy days. The class room should be equipped with adequate blackboards, chairs, and tables. It has been demonstrated that one of the most valuable contributions of the course is the opportunity offered to study fire-fighting equipment, tools, devices, and materials used by modern fire departments.

Instructors

a. Selection of Instructors

Instructors in charge of firemen classes should be well qualified Drill Masters, or other officers and firemen with experience and ability to teach. Each school is in charge of a chief instructor, with one or two regular assistant instructors.

All instructors are selected and assigned by the Chiefs of the Fire Departments for work. Instructors are not confined to teaching in their own departments. Many are assigned to other schools for special work, and to assist the local instructors. Instructors who have been trained are available for service anywhere, and the Chiefs have co-operated in allowing them time to assist with the entire program.

b. Special Instructors

In addition to the regular instructors in each zone school, expert itinerant instructors are assigned to cover certain technical subjects in which they are specialists. These instructors are assigned by the State Supervisor for one conference with each drill school. Arson and Preservation of Evidence, Forest Fires, Salvage Work, and Hydraulics are some of the special topics covered in either the preliminary or advanced courses.

The following specialists have served as itinerant instructors:

Capt. Henry W. Backman, Waltham.
Capt. C. F. Bell, Brockton.
Deputy Chief Joseph Caldwell, Cambridge.
Capt. John J. Crehan, Boston.
Fire Warden John Crowe, Westborough.
Fire Warden Lincoln Crowell.
Deputy Chief Horace Hutchins, Somerville.
Captain E. C. Jacobs, Wakefield.
M. Joseph Manning, Milton.
Chief Inspector George O. Mansfield.
Captain Lorne S. McEwan, Arlington.
Captain John N. Rohan, Holyoke.
District Chief Charles A. Donohue, Boston.
Benjamin H. Spofford, Haverhill.

MASSACHUSETTS DEPARTMENT OF EDUCATION
Division of Vocational Education

TRAINING COURSE FOR FIREMEN

Attendance and Progress Record Sheet

Zone_____ Center_____ Unit_____

		1	2	3	4	5	6	7	8	9	10	11	12
Instructor_____	INSTRUCTOR												
Assistant_____													
Day of Meeting_____													
Place of Meeting_____													
Time_____													
Date Opened_____	LESSON												
Date Closed_____													
Closing Exercises (Date)_____													
Place_____													
NAME and RANK / TOWN / DATE													

Exhibit A

Supt. Lorton C. Walden, Worcester.
Captain James McCarthy, Weymouth.

c. Training of Instructors

Before schools of any type can be conducted successfully, a trained corps of instructors is necessary. Before a fire school program is started, a group of Drill Masters should be selected for preliminary training.

The first active step of the plan was a one-week conference, conducted under the auspices of the Vocational Division, State Department of Education, and the Office of Education, Department of the Interior, Washington, D. C., at Worcester, for familiarizing selected drillmasters and instructors with the plan, and with suitable educational methods for carrying it out.

This conference convened Monday, June 26, 1933, at the Central Fire Station, Worcester, with an enrollment of twenty members, most of whom served as instructors in the zone training schools held the following fall. This conference was conducted by Frank Cushman, Chief, Industrial Education Service, Office of Education, U. S. Department of the Interior, Washington, D. C. Mr. Cushman disclaimed any professional knowledge of fire department work, and defined his function as that of a guide in efficient educational procedures and practices.

A second conference of zone school instructors was held at Worcester the week beginning April 23, 1934, for the purpose of capitalizing the experience gained in the ten zone schools, of standardizing and analyzing the instructional material for both elementary and advanced fireman training classes, and of making an intensive study of appropriate teaching methods and devices.

M. Norcross Stratton, Supervisor of Industrial Teacher-Training for the Massachusetts Department of Education, and his assistants, conducted the conference. The group included most of the members of the 1933 conference, and a few other Drill Masters who have been or expect to be utilized as instructors in the State program of zone schools.

Regular training courses for training instructors were established, and are now conducted annually by the Supervisor of Firemen Training Classes, and his assistants. These

courses are given for a one-week period from 8 a.m. to 5 p.m. each day.

Drill Masters and other firemen from all parts of the State assigned by their Chiefs are members of these classes. Some of the men commute each day; others are provided with sleeping quarters at the fire station.

Demonstration material, equipment, and facilities of the drill tower and drill yard are furnished through the co-operation of the local Fire Chief.

The topics for the instructors' conferences follow:

1. What to Teach — the selection of content for a zone school.
   Analysis of Evolution — Teaching Points.
   Analysis of Technical Subjects.
   Organization of Content for Zone School Program.
2. How to Teach — Principles of good teaching applied to fire-fighting instruction.
3. How to Use Specialists in the Zone Schools. Advantageous use of experts in the specialties of fire-fighting service.

At the close of the conferences, suitable exercises are held, and certificates awarded by the Department of Education to those who complete the course. Eighty per cent attendance and satisfactory work is required for the certificate.

Local Drill Masters

The plan of training contemplates the organization of local drill schools conducted by local Chiefs for members of their respective Fire Departments. It is planned to select from those who attend the zone schools certain men to be assigned by the Chief of the Fire Department as local Drill Masters. These local Drill Masters are eligible to attend training schools for instructors. Much emphasis is given to method of conducting drill schools in the advanced zone school classes. To date in Massachusetts, eighty such local drill schools have been established.

The zone school drill masters visit the local departments upon invitation often extended through the Department of Education, to assist their former students with their local drill school problems.

Organization

a. Selection of Members of Classes

Letters to local Chiefs are sent by the State Supervisor announcing the opening date for each zone school, and requesting them to delegate men from their departments for enrollment in the class.

Sample of Letter Announcing Opening of Class

My dear Chief:

This is to announce the opening of another zone school for training firemen to be held at (municipality), beginning Saturday afternoon, (date), and continuing for twelve weeks.

The demand for continuance of this program and the evidence of very tangible results reported on account of the training, is most encouraging. As in previous classes, practice in evolutions and discussion of good fire fighting technique, will be included in this course.

This class will open at the (name of Fire Station), on Saturday afternoon, at 2 p.m., at the invitation of (name of Chief).

These courses, with the approval of Commissioner Reardon, are authorized by Director Robert O. Small, of the Division of Vocational Education, and in cooperation with the Massachusetts Fire Chiefs' Club.

As this is a beginning class, do not send men who were enrolled in the previous classes. If you are interested in designating men from your department who wish to enroll for this course, please fill in the enclosed registration card, and return it to us at once. As the enrollment is limited, not more than four men should be sent from your department.

Respectfully yours,

.....

Supervisor of Firemen-Training classes.

Sample of Follow-Up Letter

My dear Chief:

This is to remind you of the Firemen's Training Course to be opened on (date, place, time, and municipality).

We have not heard from your department as to whether any of your men will be present. It will assist us in organizing the class if you will return your registrations at once.

Plans have been made for twelve sessions including drill evolutions using the drill tower equipment and conferences on fire problems.

This preliminary course is planned for the benefit of many who have not yet attended these classes and have expressed a desire to do so.

Respectfully yours,

.....

Supervisor of Firemen-Training classes.

An enrollment card is enclosed for the local Chief to return to the State Supervisor. The enrollment from each municipality is limited from two to four men.

Sample of Postal Card Used for Registration Addressed to Vocational Division

Date.....

The following men will enroll in the Training Course for Firemen to be conducted at .....
Name and rank .....
Name and rank .....
Name and rank .....
Name and rank .....

Respectfully.....
Chief of the Fire Dept.....
Municipality

An enrollment letter is addressed to each student, and is sent to the Chief for distribution to members, with a letter of transmittal.

Sample of Enrollment Letter to Members of Class

(Salutation)

You have been enrolled in the zone school for firemen at (municipality)

Opening date —
Place —
Time —
Instructor —

Twelve sessions—certificates awarded to those whose attendance record is satisfactory. As those who attend will

Massachusetts Department of Education, Division of Vocational Education
Robert O. Small, Director

Firemen Training Course

ATTENDANCE RECORD

Please mail this report to M. N. Stratton, Supervisor, 212 State House, Boston, immediately after each session of the class.

Zone.....Center.....Date.....

Instructor in Charge.....

.....

Mark those Present, X; Absent, A.

Please add names of new members

Exhibit B

participate in the drill evolutions, suitable clothing should be provided.

Respectfully yours,

.....

Supervisor of Firemen-Training Classes.

Sample of Letter of Transmittal to Fire Chief

(Salutation)

I am enclosing enrollment letters for the men in your department who have been enrolled in the firemen-training class.

Will you please distribute these to the men concerned. I thank you for your cooperation.

Respectfully yours,

.....

Supervisor of Firemen-Training Classes.

b. Size of Classes

Classes are limited to about fifteen men per teacher. In most centers two instructors handle thirty men in each group.

c. Time of Meeting

Classes are held from 2 to 4 p.m. on Saturdays. When daylight saving time is in effect, classes are held from 6:30 to 8:30 p.m. on one night a week, selected by agreement with local authorities and students. Classes are held in the spring and fall months.

d. Length of Course

Two courses are given — a preliminary course and an advanced course of ten sessions each. In some zones but one course of 12 to 15 sessions is given.

e. Release Card

A card releasing the city or town in which the schools are held from liability is signed by all students at the opening session.

Sample Release Card

IN CONSIDERATION of the instructional program in Fire Fighting given by the Massachusetts Department of Education and the Committee on Fireman Training, in co-operation with the Fire Department of the (town) (city) or municipality.

I HEREBY WAIVE any claim against said (municipality) and said other organization on account of accidental injury or loss which might arise from my attendance at any instructional session or from my travel to or from them.

....

Date Signature

.....

(City or Town)

f. Register

While the records are kept as simple as possible, it is necessary to keep an accurate record of attendance and work done at the drill school sessions. Two records are required to be kept by the Drill Masters — the weekly report sent to the State Supervisor, and the register which is turned in at the close of the course. All records and registers are kept on file at the office of the State Department.

(See Exhibit A—Copy of Class Register)

(See Exhibit B — Copy of Weekly Attendance Record)

g. Credit

Certificates signed by the Director of the Division, Supervisor of Fireman Training Classes, Chief of the Fire Department in the zone municipality, Drill Master in charge, and Chairman of the Advisory Board, are issued to all who attend at least 80% of the meetings, and whose work is satisfactory. Statements are given to those who attend at least 50% of the sessions, and do satisfactory work. Full credit is allowed when lost lessons are made up.

Sample of Certificate

[SEAL]

THE COMMONWEALTH
OF MASSACHUSETTS
Department of Education
James G. Reardon, Commissioner
Division of Vocational Education
Training Classes for Firemen

THIS CERTIFIES THAT (Name of Fireman) has completed satisfactorily a 24-hour course of training for firemen conducted at (Zone Municipality) from (Date) to (Date) consisting of the following (number of sessions attended) assignments, (first or second) unit.

(Topics used in the class are listed here)

.....

Instructor in Charge

....

Chief of the Fire Department — Supervisor of Treacher-Training

....

President, Massachusetts Fire Chiefs' Association and Chairman, Advisory Committee — Director, Division of Vocational Education

Sample of Partial Credit Statement

To Whom It May Concern:

This certifies that (Name of Fireman) has completed satisfactorily (number) hours of a 24-hour course of training for firemen conducted at (zone municipality) from (date) to (date), consisting of the following (number of sessions attended) assignments, (first or second) unit:

(Topics attended are listed here)

.....

Supervisor of Firemen-Training Classes.

h. Closing Exercises

After the close of each class, formal exercises are held, at which certificates and statements are awarded. State officials, members of the Advisory Board, and local officials are invited. Arrangements for these exercises are made by committees from the classes involved, and in cooperation with the local Chiefs. The State Supervisor prepares the program and sends out notices.

Sample of a Typical Letter of Invitation to a Fireman-Training Class Graduation

My dear Sir:

The committee on arrangements for the Arlington Firemen Training Class, in cooperation with Chief Daniel B. Tierney of the Arlington Fire Department, has arranged to hold graduation exercises at the Highland Station, Arlington, on Wednesday, January 13, at 7 p.m. The spring class and the fall class are combing their graduation exercises on this date.

They have arranged an interesting program including an illustrated lecture on fire practice and addresses by Commissioner of Education, James G. Reardon, and other officials of the State Department.

On behalf of the Committee, you are cordially invited to be their guest at these exercises. We trust you will find it convenient to be present.

Respectfully yours,

.....

Supervisor of Firemen-Training Classes.

i. Instruction Material

The following material is available for use of instructors in carrying on classes.

(1) Apparatus, ladders, and appliances at hand from the local Fire Department.
(2) Demonstration of model houses and stores built by trade schools for demonstrating methods of fighting fires.
(3) Metal houses for demonstrating "ventilation."
(4) Demonstration devices to illustrate uncommon causes of fires, made by trade schools.
(5) Instructors' Manual — containing analysis of evolutions with teaching points. Outlines for technical lessons, etc.
(6) Special forms for use in class work on such subjects as fire-fighting methods, fire extinguishers, forcible entry, salvage, etc.
(7) Instruction pamphlets for supplementary reading as follows:

I. Knots and Hitches.
II. Ladder Evolutions.
III. Explosives and inflammables.
IV. Arson and Other Fraudulent Burnings.
V. How Fires are Located in Buildings, and Some Things a Fireman Should Know at a Fire.
VI. Salvage Work in Modern Fire Fighting.
VII. Kinds of Fires and How to Fight Them.
VIII. Examination Questions:
  a. Questions for House Drill
  b. Questions on Seagrave Pump
IX. Salvage.
X. Pumping Engines.

Courses of Study

The content for courses of study was worked out at Drill Masters' conferences, with the advice and approval of the Advisory Board. Some of the topics for the courses follow:

Evolutions

A. Knots and special tools.
  (1) Tying Bowline knot.
  (2) Pulling plastered ceiling.
B. Wall and roof ladder work.
  (1) Raising wall ladder—2 men.
  (2) Dogging ladder.
  (3) Raising roof ladder.
  (4) Bracing long ladder.
C. Wall and roof ladder work.
  (1) Raising 35-foot extension ladder —3 men.
  (2) Raising 55-foot extension ladder with poles—6 men.
D. Elementary hose work.
  (1) Taking hose off wagon.
  (2) Reducing line.
  (3) Making Siamese connection.

(4) Replacing burst length.
(5) Picking up and loading hose.

E. Entering buildings with lines.
(1) Carrying line up stairway.
(2) Backing line out of building.
(3) Carrying line up ladder.

F. Wet hose hydrant.
(1) Opening hydrant.
(2) Shutting down hydrant.
(3) Operating booster line.
(4) Drafting water.

G. Advanced ladder work.
(1) Raising aerial ladder.
(2) Bracing long ladder.
(3) Scaling ladders.

H. Advanced wet drill.
(1) Connecting to pumper.
(2) Shutting down pumper.
(3) Operating Baker cellar pipe.

I. Tools and appliances.
(1) Chopping hole in floor.
(2) Forcing door with Detroit door opener.
(3) Repairing leak with burst hose jacket.

J. Rescue drill.
(1) Descending rope.
(2) Lowering man with rope.

K. Gas mask drill, etc.
(1) Putting on gas mask.
(2) Applying artificial respiration.

Conferences and Classroom Lessons

1. Fire Extinguishers.
Care of Hose.
2 Ventilation.
Forcible entry.
3. Overhauling.
Salvage.
4. Inspection and demonstration of equipment and apparatus.
5. Elementary Hydraulics.
6, 7, 8. Types of Fires: Size-Up and Methods of Fighting, including Ventilation and Forcible Entry.
9. Fire Inspection and Pervention, Fire Laws, Arson.
10. Forest Fires.

Methods of Instruction

a. Sessions

Sessions are of two hours in length. Classes are divided into squads of not over 15 men each. Drill Masters are assigned to each squad for evolution drills. Classes are combined for class work, although in some schools, class work is conducted for an hour with one squad while the other group is carrying on evolution work, and at the end of the hour groups are shifted.

b. Student Participation

In evolution work, every man is required to take part in and go through the drill. The instructor gives demonstrations of the evolution, questions the men on procedure, and then requires each man to perform the evolution.

c. Classroom Work

The lecture method is not advised. Instructors are taught to use the developmental method of teaching class lessons, the discussion or conference method, or the demonstration method. Blackboards and illustrations are freely used.

d. Notes

Very little note-taking is advised. Mimeographed notes are made available where required.

Drill Masters Association

As part of the program, Drill Masters who have completed the instructors' training course have organized the Massachusetts Fire Department Instructors Association. This organization meets once each month with an annual meeting in June. Matters concerning the fire schools, discussion of course of study, changes in method, analysis and revision of work material, are taken up at the meetings.

Specialists in various fields are invited to speak. Fire Chiefs, officials, and others attend. This results in a continuous instructors' teacher-training program, and is one of the most valuable features of the fire school organization.

The present officers of the Association are: President, Capt. William C. Carroll; Secretary, Capt. George H. Murray, and Treasurer, Lieut. Richard E. O'Day.

Summary of Zone Schools Conducted in Massachusetts from September, 1933, to January, 1937

Zone Center	Number of Classes	Number of Men Receiving Certificates
Arlington	9	328
Attleboro	4	67
Brockton	6	240
Brookline	7	191
Chatham	1	19
Falmouth	2	63
Fitchburg	3	49
Haverhill	3	102
Hyannis	1	24
Lowell	4	77
Needham	1	31
New Bedford	4	77
Pittsfield	5	120
Springfield	6	160
Truro	2	83
Worchester	7	211

Total number of men receiving certificates 1842
Cities and Towns represented — 234

New House for Weymouth

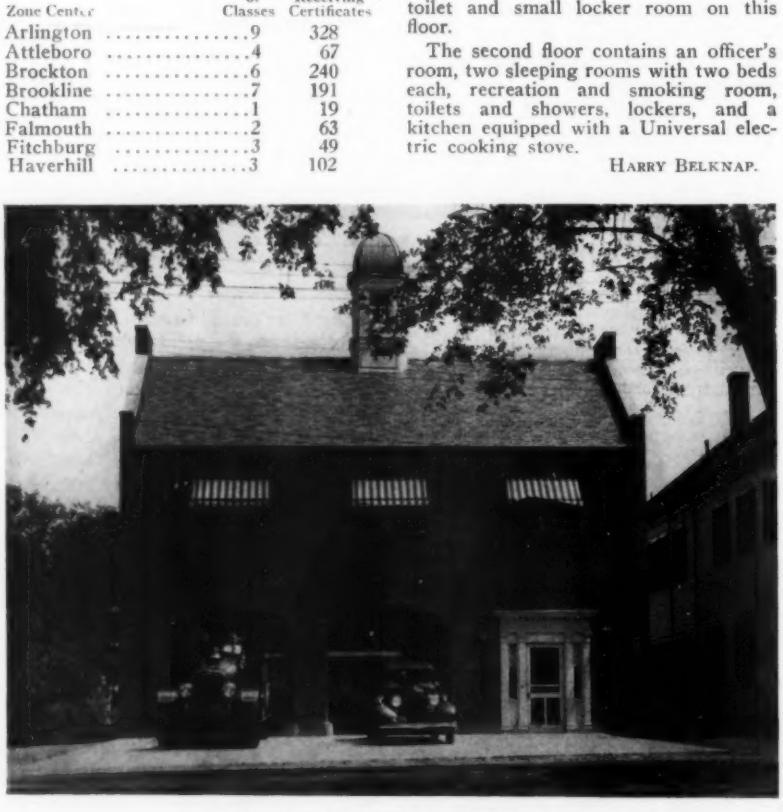
A handsome new red brick fire house of Colonial design was completed a few months ago for the Fire Department of Weymouth, Mass. This building is situated in the North Weymouth district of the town and is occupied by Engine Company No. 1, of which Captain Timothy McCarthy is the commanding officer. There are five men in the unit and the apparatus is a Seagrave 750-gallon motor pumping engine with booster tank.

The house was planned by the Funk & Wilcox Company, Architects, and the contractor was the H. L. Hauser Building Company, Inc.

The building is of red brick, two and a half stories high. There is a General Electric oil burning heater in the basement, with hot water boiler attached. There are two overhead sliding doors on the apparatus floor. The watch desk is enclosed and there is a toilet and small locker room on this floor.

The second floor contains an officer's room, two sleeping rooms with two beds each, recreation and smoking room, toilets and showers, lockers, and a kitchen equipped with a Universal electric cooking stove.

HARRY BELKNAP.



New Fire House at Weymouth, Mass.

Chicago, Ill., and Detroit, Mich., Run Tests on Recently Completed

Diesel Operated Fire Boats

THE new diesel fireboat for the city of Chicago, Ill., which was recently launched at the yard of Defoe Boat and Motor Works, Bay City, Mich., was designed by John G. Alden, noted naval architect of Boston, Mass., who prepared the plans for the highly successful Diesel fireboat "City of Portland," which has been in use for several years in Portland, Me.

The Chicago boat is to be delivered and placed in service in the early spring and will be named "Fred A. Busse." An unusual feature of the deck arrangement is a collapsible tower which folds down over the after deck to permit the vessel to pass beneath the bridges on the Chicago River.

Dimensions of the "Fred A. Busse"

The dimensions of the new boat are as follows: Length overall, 90 feet, 6 nches; length on the water line, 87 feet; beam, moulded, 22 feet, 4 inches; depth, moulded, 11 feet; draft, extreme, 6 feet, 9 inches; height above water line, 15 feet; speed, 15 miles per hour; power, propulsion, 750 b.h.p.; power, pumping, 1,000 b.h.p.: pump capacity, 150 pounds, 7,500 g.p.m.; pump capacity, 300 pounds, 3,750 g.p.m.; accommodations for eight men.

Chief Fire Marshal Michael J. Corrigan and Deputy Chief Anthony J. Mullaney, of the Chicago Fire Department, have supervised the construction.

The monitor tower of the folding type is of double A frame construction, supported on a base housing just aft of the deckhouse. A 7-inch pipe leading to the nozzle is built into the structure and fitted at the bottom with a swivel pivoted on the same axis as the A frame. Double quadrants and worm drives permit the tower to be raised or lowered by hand by two men, the complete operation taking only two minutes.

There is a low wheelhouse at the forward end of the deck structure. There is a lounging room for the crew aft of the wheelhouse and then there is a large room containing eight berths. In the center of this space is a ladder leading down to the engine room, this stairway being enclosed in the engine room trunk or partition. Two toilets and a lavatory are located on the starboard side and two bath-rooms and a lavatory are on the port side. There is a hose room in the aft end of the deckhouse. The galley, refrigerator, and mess room are located in the forward hold.

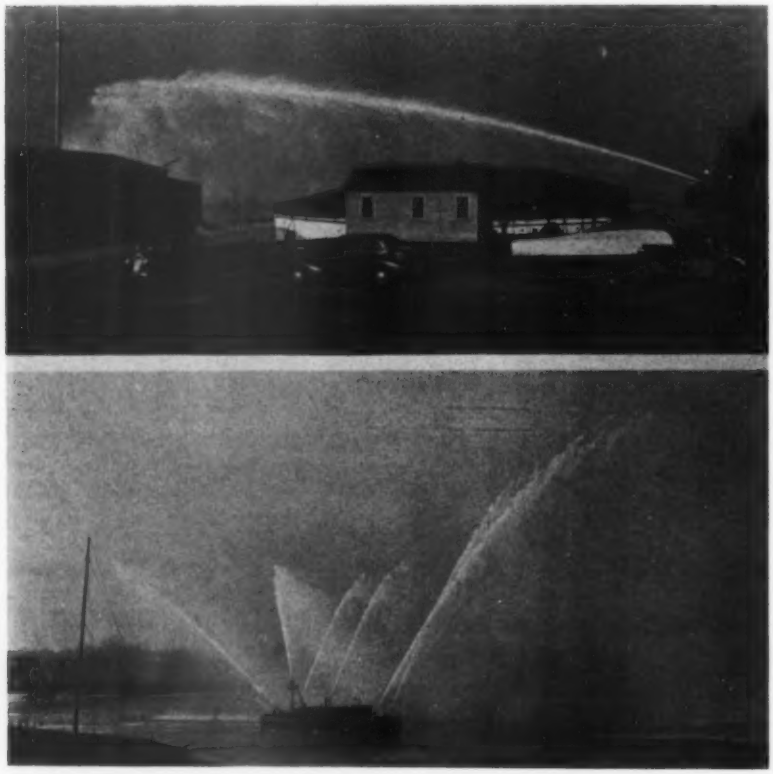
Upper—Propelling the Diesel Fireboat "Fred A. Busse," of the Chicago Fire Department, by Means of Streams from the Aft Turret Nozzles. Lower—Close Up of Boat Delivering Streams of 9,444 G.P.M. at 150 Lbs. Pump Pressure. This Shows Four 2½-Inch Turret Streams at 130 Lbs. Nozzle Pressure and Two 1¼-Inch Streams at 110 Lbs. Nozzle Pressure.

The pumping plant consists of four Dean-Hill multi-stage centrifugal, single suction pumps, each having a capacity of 1,900 gallons of water per minute when operated at 1,000 revolutions per minute against a 150-pound head. The four pumps are situated amidships and each is driven by its own diesel engine. There are five diesel engines, one being used exclusively for propulsion. Of the other four two are used for pumping only and two can be used for both pumping and propulsion. The engines are all 6-cylinder Cummins Diesels, each rated at 250 horsepower at 1,000 r.p.m.

The center engine of the after group drives a 3-blade Columbian bronze propeller and is fitted with a clutch and reverse reduction gear.

This propeller is 44 inches in diameter and the two other engines each drive a 28-inch wheel.

Auxiliary equipment includes an automatic Fairbanks-Morse pressure controlled fresh water and sanitary pump; a 30 k.w. Harnischfeger-Cummins Diesel generator set for supplying current for light and power; an American Engineering Company electric steering gear with emergency tiller; and a 4-horsepower motor driven capstan. An Arco steam heating system for supplying hot water and for heating the vessel in winter is provided with an automatic oil burner.



Upper—High Pressure Test of the Chicago Diesel Engine Fireboat "Fred A. Busse," with Pump Pressure, 318 Lbs.; Nozzle Pressure, 265 Lbs.; Size of Tip, 3-Inch and Delivery, 4,370 G.P.M. Lower—The Boat with All Six Streams in Operation

The exhausts from the engines pass out through the sides of the hull. Fuel is carried in two welded steel tanks, located in the after hold. Each tank has a capacity of 1,100 gallons of fuel oil. There are telegraph connections between the pilot house and engine room; but the center propelling engine may be directly controlled from the pilot house. There are two monitor nozzles on the bow deck, one in the stern, and one on top of the tower. There are six hose connections on each side of the deckhouse.

This new boat represents the most modern trend in steel fireboat construction and will prove of great value in guarding the extensive waterfront of Chicago.

HARRY BELKNAP.

Results of Builders' Tests of the "Fred A. Busse"

A series of builders' tests of the pumps and engines of the "Fred A. Busse" was conducted at the plant of the Defoe Boat and Motor Works, on January 27 to 30. The tests were conducted by James M. Gleason, Engineer in Charge, and John J. Riley, Assistant Superintendent, representing the Chicago Fire Department, assisted by Charles H. Lincoln, representing the American Bureau of Shipping, and Vernon L. Durrstein, Experimental Engineer, and Richard Jones, representing the Cummins Engine Company. The final acceptance tests are to be conducted in the latter part of April. The data of the tests, furnished through the courtesy of the Chicago Fire Department, were as follows:

The first test which lasted four hours used all four pumping units. The total delivery through five outlets was 9,040 gallons per minute at 154 pounds pump pressure.

The second test delivered an average of 9,444 gallons at 150 pounds pressure for two hours.

The third and fourth tests were high pressure tests. The pumps delivered an average of 4,370 gallons per minute for an hour at pump pressures varying from 145 to 318 pounds. During the other test, for two hours, the output was 4,620 gallons per minute at pressures varying from 135 to 304.

Fifth test, utilizing the two forward pumps, was for two hours. The delivery was 4,727 gallons per minute at a net pumping pressure of 150 pounds.

For the last test each of the pumps was tested separately and was supposed to deliver a minimum of 2,400 gallons at 110 pounds pressure for an hour. The specifications were exceeded anywhere from 5 to 29.6 per cent.

The individual 150 pound pressure tests for each of the pumps, showed an average discharge in excess of the specifications by 25 per cent. The pumps had to deliver a minimum of 1,900 gallons at that pressure.

All engines are Cummins Diesel Model L, 6-cylinder, 7-inch bore and 10-inch stroke, rated to develop 250 h.p. at 1,000 a.p.r.

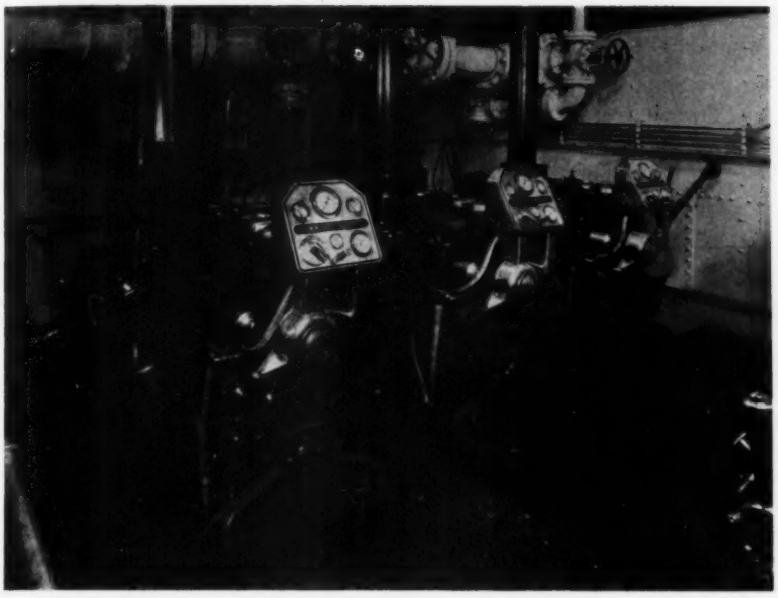
Both forward engines are pumpers only and are directly connected to their respective pumps through Fasts flexible couplings. Both aft wing engines may be used either for pumping or for propulsion. These engines are connected to their respective pumps through twin disc clutches and Fasts flexible couplings. These engines are connected to their respective propeller shafts through planetary reverse gears.

The center aft engine may be used for propulsion only and drives the propeller shaft through a planetary reverse gear and a reduction gear of 1.64 to 1 ratio. Controls of this engine are so arranged that it may be completely operated from the pilot house of the boat. All engines are so placed that their respective flywheel ends face toward the center of the engine room.

All pumps are Dean Hill centrifugal Model, 10-inch—A-3 stage diffuser type rated 1,900 g.m.p. at 15 lbs. per square inch at 1,000 r.p.m.

Detroit Fire Department Fire Boat "James Battle"

During the past year the Detroit Fire Department remodeled the Fire Boat "James Battle," which was pur-



Engines of the Diesel Fireboat "James Battle" of the Detroit Fire Department

chased in 1900, to the extent of replacing the two obsolete steam driven fire pumps.

With the removal of these pumps and setting the steam propelling engine aft 40 inches enough space was obtained to place six Diesel driven centrifugal pumps, three starboard and three port, athwartship, with adequate space of approximately 22 inches between each unit.

Each unit is a Model H.B. automotive type Cummins-Diesel engine, 4⅞-inch bore x 6-inch stroke, developing 155 h.p. and direct connected by a Morflex coupling to a Seagrave centrifugal four-stage pump, with rated capacities as follows:

1,200 gal.....120 lbs.
1,000 gal.....150 lbs.
850 gal.....200 lbs.
600 gal.....250 lbs.
350 gal.....300 lbs.

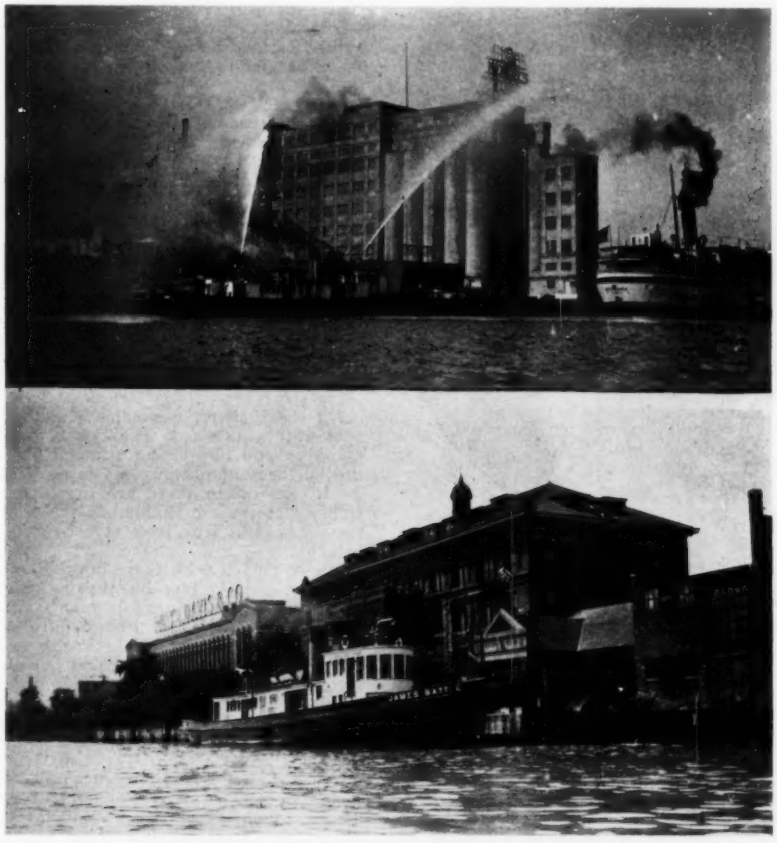
The r.p.m. range of the motors under wide open running conditions is approximately 1,600 r.p.m. at 120 lbs. to 2,100 r.p.m. at 300 lbs. The motors are water cooled and so placed in the ship that the tops of the motors are below the water line, so that the water jackets are always filled with water, and a centrifugal water pump on each unit assures circulation. The water is passed through a large strainer before entering the lines to the motor, which are conducted to the bottom half and circulated to partially cool the oil before passing to the cylinders, and then discharged into the suction pipe.

Each fire pump discharges into a well gated 10-inch loop. A 5-inch check valve is located in the discharge pipe just above the pump. This allows each pump to operate either separately or together without the opening or closing of any valves. The loop is cross connected and over pressures are governed by a 4-inch Ross Relief Valve.

An aluminum operating panel is mounted on the front of each motor. It contains starting switch, oil, temperature and pump pressure guages and throttle control. Each panel faces the center aisle between the starboard and port units, which has ample room and allows one engineer to very easily operate and watch all units running at the same time.

Each motor consumes approximately 10 gallons of fuel oil per hour at full load. There are two 1,000 gal. fuel oil tanks, one port and one starboard, cross connected, which gives approximately 30 hours of continuous running of all motors together without refueling.

The exhaust pipe is connected at the center of the manifold and extends straight above each motor through the deck house roof with the muffler on the outside. The manifold and pipe are covered with a metal shield open at the bottom, and the top is formed into a venturi with the exhaust pipe so that when the motor is running a slight vacuum is formed, drawing free air through the



Two Views of the New Diesel Fireboat "James Battle" of the Detroit Fire Department

shield and pipe, thereby air cooling the exhaust manifold and exhaust pipe. The motors are turned over with 24-volt electric starters. The starting switch on the operating panel is so wired that there are two contact points. The first contact point enmeshes the gears with six volts; the second point turns the motor over with 24 volts.

In the acceptance test each motor was run individually, three together and then all at one time. These tests were very satisfactory and the Fire Commission and other Department officers were very well pleased.

JAMES McFALL, FORMER SECRETARY OF I.A.F.C., DIES AT PITTSBURGH

Served the International Association of Fire Chiefs in That Capacity from 1905 to 1919—Was Chief of Roanoke, Va., and later of U. S. Fleet Corporation

JAMES McFALL, who served for fourteen years as the Secretary of the International Association of Fire Chiefs, died of pneumonia at his home in Pittsburgh, Pa., on January 15, after an illness of two months.

Chief McFall was born in Bedford County, Va., in 1869. His parents moved to Roanoke, Va., when he was twelve years of age, and he was educated in the schools of that city. As a young man he was employed in the auditing department of the Norfolk & Western Railroad. From 1897 to 1903, he served as City Auditor of Roanoke. He was a charter member of the Junior Hose Fire Company of that city, and was Assistant Chief of the Fire Department in 1892 and 1893. He was elected Chief on January 1, 1894, and served until February 28, 1918, when he resigned to become General Fire Marshal of the United States Emergency Fleet Corporation, his duty being to organize Fire Departments in the 120 shipyards of the corporation. Chief McFall served in this position during the period of the World War.

The Late James McFall

Taken when he was Secretary of the I.A.F.C. and Chief of the Roanoke Fire Department.

In November, 1919, Chief McFall became Manager of the Welfare Department of the West Penn Power Companies, and was appointed General Claim Agent of the companies in 1923. He served in that capacity until his death.

Chief McFall was Secretary of the I. A. F. C. from the Duluth, Minn., Convention, in 1905, until 1919, after his appointment to the U. S. Emergency Fleet Corporation, when his duties with the government necessitated his resignation.

The funeral was held at Oakey's Chapel, Roanoke, on January 19. Besides his widow, Mrs. Flora V. McFall, he is survived by a brother and a sister.

The Man Who Knitted

By EARLE ENNIS

A woman came to see us the other day—a smug sort of woman—and said she to us: "Write something, will you, in your column about the firehouse in my neighborhood. Every time I pass there I see a fireman knitting a sweater—the sissy!"

All right, sister, we will. You probably call yourself a taxpayer. As a taxpayer you like to see firemen about the business of putting out fires. Well, so do we—when there are fires. And so they are, these firemen, when there are fires. But let's look at a fireman's life.

We've ridden with these boys of rubber coat and helmet on the galloping red truck that swings through traffic with its siren going. And we have yet to find a sissy among them. We've seen them go into hells of flame and gas and smoke that you, dear taxpaying sister, wouldn't dare even approach. You'd stand back and beat your hands and inquire of the world: "Why don't they do something?"

We've seen them stand under a swinging cornice and cling to a brass nozzle, with their eyes on licking flames and their minds on the woman who was waiting up for them, and the kid that called them "daddy" asleep in a crib. And they've stuck to the nozzle until the cornice came down and made a widow of the waiting woman and a fatherless child of the infant in the crib.

We've seen them go down in the holds of ships where cyanide fumes waited for them like a python in a tree—go down without hesitation, knowing they might never come up—with strain in their eyes, and misery in their hearts—and never come up, alive. We've seen them stand in a circle of oil tanks, with the fingers of death plucking at them like strings on a harp—and watched, horror-stricken, puddles of burning oil lick them up as an avid cat licks milk.

We've seen these boys of gong and tape fight long, frozen hours on the docks, without food or warmth, battling the smothering, gasping, heavy coils of copra smoke that cut the lungs like razors, squeezed by its strangling coils into blue-faced figures lying face downward on a pier. And we have yet to find a sissy among them all.

When you, dear sister, were asleep in your bed, and dimly through the fog of your comfortable relaxation, heard the faint drone of a siren, we've been with them, these unsung heroes, racing through the night. We've seen them swing long ladders to impossible heights to bring down tenderly in their arms, women and children and even frightened men, through flickering yellow tongues that clamored for human flesh.

One such knits a sweater, dear lady, and you call him sissy. Well, we had interest enough to check your story. We found him as you told us, chair tilted against the firehouse, knitting a sweater as you said. Square jawed, clear eyed—unashamed.

"For whom?" we asked.

He grinned a companiable, freckle-faced grin.

"A little kid up in ——— Hospital," he said. "She had infantile paralysis. Just learning to walk. Family's kinda hard up. I was up there to see my sister—she's having a baby—and saw the little youngster. Smart kid. Cute, too. Just thought she's like one. . . . I used to be in the navy. We learn a lot of things there. . . ."

We looked hard at him.

"Ever been in the ring, fellah?"

"Navy events—light heavy weight. Wife didn't like the idea, so cut it out when I got married." He held up the sweater—a cute little gadget.

"Ain't she a honey?"

That answers your request, Mrs. Whatever - your - name - is. — *From San Francisco Chronicle.*

Discuss New Hampshire Laws

The meeting of the New Hampshire Fire Chiefs' Club, which was held in Concord, N. H., on February 10, with luncheon, at the Eagle Hotel, was devoted to a discussion of revision of state fire prevention laws and regulations.

Mason City Has Low Loss

Chief Daniel H. Shire, of Mason City, Ia., reports that the fire losses for 1936 are the lowest the city has ever had. There were a total of 372 alarms with a loss per fire of $72.98, and a per capita loss of 92.3 cents. In 1935, the per capita loss was $1.37, with a loss per fire of $193.58

PROMOTIONAL STUDY COURSE

Herein is presented a series of definitions, questions and answers designed to aid fire department officers in preparing themselves for promotional examinations. In this department, which appears monthly, will be included questions typical of examinations held throughout the country.

Definitions

Flue: The opening or hole in a chimney up which the smoke and gases of combustion pass to the outer air.

Jute: A soft fibre made from tropical plants. When burning it gives off a noxious gas.

Japan: A black varnish used on metal goods. Turpentine, linseed oil and benzine are used as solvents.

Incombustibles: Materials which do not readily burn when subjected to ordinary fire.

Questions

(To be answered in next issue)

1. If, while in command at a fire, you were informed that one of the water mains in the immediate neighborhood had burst, what would you do? Could you continue to use the main after the flow from the broken section had been stopped?
2. Describe in detail the fire precautions that should be exercised in an oil plant. Plant to be of such an extent as to have crude and refined oils in tank storage, a refinery and extensive yard piping, railroad sidings in and along plant. What fire fighting equipment should the plant maintain and by whom handled? What city equipment would be most suitable in fighting a fire at such a plant?

False and True Questions

(Is each question false or true? Answers in next issue)

3. T F—Proper ventilation adds to the probability of a "back draught" ("hot air" explosion).
4. T F—The prime object of fire alarm signalling systems is their speed in transmitting alarms.
5. T F—Ventilators on ships prevent the collection of dangerous gases.
6. T F—In the event of a sprinkler head opening in an exposure building, due to radiated heat, men should never close the sprinkler shut-off valve until all danger is past.
7. T F—Pale faced persons requiring first-aid should not have their heads placed in a position higher than their bodies.
8. T F—There are two conditions to be taken into consideration when overhauling: first, the condition the building: second, the contents to be overhauled.
9. T F—It is never necessary to break plate glass windows in order to reach the base of the fire.
10. T F—Exposure hazard is one of the leading factors in the great fire loss in this country.
11. T F—Not all exposures are hazards.
12. T F—Skylights over stairways are of no aid to ventilating operations.
13. T F—Only in rare cases are men ordered to enter shipholds which are involved in fire.
14. T F—It is occasionally necessary to open windows on unexposed sides of exposure buildings.
15. T F—Sprinkler heads in buildings adjacent to the fire building are sometimes opened by heat transmitted through windows.
16. T F—Firemen handling fire streams need only be certain that the water is being distributed in the general direction of the fire.
17. T F—Most ships are divided into compartments having watertight bulkheads in the lower hold.
18. T F—Removal of threshold from doorways when overhauling often facilitates the removal of water from floor.
19. T F—When overhauling, if an article contains heat it should be assumed that it contains fire and be immersed in water or otherwise wetted.
20. T F—The voids in a building do not need attention while the work of overhauling is in progress.
21. TF—Promiscuous chopping of holes in floors for the purpose of draining water should never be resorted to by Fire Department members when overhauling.

Completion Statements

22. A device used on a hydrant to permit an engine to be placed in service on a line without shutting down the line is called a.....
23. The base of a ladder may be placed .....(from, to) a building if it is to support a hose line than if it is to be used for rescue purposes.
24. It is.....practice to use water streams in ammonia refrigerating plant fires.
25. In fighting fires in varnish vats the use of water streams is.....
26. In relieving floors of water, cut the drain holes.....

Answers to Questions in Previous Issue

1. (a) Three methods may be followed in ventilating cellar which is involved in fire; First, where there are front and rear doors or windows, these may be opened, as well as doors leading to cellar inside of building, if such is available; second, cutting holes in floor front and rear of building, near windows; and third removing boards from floors.

The chief dangers in ventilating a cellar fire are the possibility of extension of fire to floor above and the endangering of men working on the ground floor. Where floor is to be opened up, it is very essential to have a charged line ready for operation just as soon as such opening is made. This also applies to opening inside door into cellar. The tendency is for fire to travel upward, and in view of this it is very essential that inside exposures be covered when openings are made. Openings should not be placed at points which would endanger men operating on the floor. It is usually preferable to cut the floor near windows so that the smoke and fire rising may pass out of the windows and at all times be under the control of the department.

When removing boards from the floor, this is usually done in the aisles so that unnecessary shifting of materials will not be required, and to eliminate the delay incidental to such.

(b) Iron shutters when latched or bolted on the inside can usually be opened from the outside by inserting the blade of an axe or the point of a hook or claw tool under them and lifting them off their hinges, or until the latch loosens from its catch on the inside.

Another method which is sometimes successful is striking the lower rivet of the fastening, which holds the latch, with the back of an axe. The fastening for the latch is on the inside of the shutter, but the rivet projects through. When the rivet is struck as directed above, the latch may spring upward and out of the fastening or catch, permitting the shutter to swing open.

When lifting iron shutters off their hinges for the purpose of opening them, whether working from fire escapes, ladders, or a roof, care should be taken not to let them fall to the street, where they might injure firemen or bystanders. Warning should always be given to firemen and persons below in such cases, as iron shutters when falling from a height may sail through the air for a considerable distance.

(c) Automobile fires usually start in one of two manners: First, by ignition of grease or gasoline around the engine due to overheating, back-firing, etc., or second, to defective wiring.

In the first case the fire may readily be confined to the combustible materials around the engine itself, whereas in the second case the fire may get a good hold in the body of the car and prove more difficult to extinguish.

In handling the fire in the first instance, carbon tetrachloride, carbon dioxide, sand, ashes, or similar materials, may be employed to extinguish the fire. In an emergency water, or soda and acid extinguishers, would prove effective, but might damage the cylinder block or other parts of the engine.

In the second instance, where fire is burning within the body of the car, soda and acid extinguisher, carbon tetrachloride, or even water will prove effective if it can be placed at the point the fire is burning.

The chief precaution to be observed in the extinguishment of an automobile fire is to guard against explosion of gasoline fuel tank. Fire burning in proximity to the gasoline tank will heat the gasoline and cause rapid generation of gasoline vapor or fumes, which are explosive when mixed with air.

2. Friction loss is found from the following formula:

Friction (100 ft. 2½ inch hose)= 2xQxQ+Q. Where "Q" is the flow in hundreds of gallons per minute. Change the 3-inch hose to 2½-inch. 600 feet (12 lengths) ÷ 2.6 = 230 feet approximately of 2½-inch hose. Friction (100 ft. 2½-inch hose)=2x4x4+4=36 pounds. Friction in 230 feet of 2½-inch hose=

2.3 x 36=82.8 pounds (friction loss in 600 feet of 3-inch hose).

(b) Nozzle pressure = E. P.÷(1.1+KL). Where E. P. is engine pressure; K (for 3-inch hose and 1¼-inch nozzle) is 0.092; L, the number of 50-foot lengths in the line, is 12.

Engine pressure is 140 pounds.

Then N. P.=140÷(1.1+0.092x12)
=140÷2.24=62.5 pounds.

3. True; 4. False; 5. False; 6. True; 7. True; 8. True; 9. True; 10. True; 11. True; 12. False; 13. True; 14. True; 15. True; 16. True; 17. False; 18. True; 19. True.

20. .....upper.....
21. .....one.....
22. .....45 degrees.....
23. .....above.....
24. ....dry pipe.....wet pipe....

Eastern Chiefs To Meet June 3 to 5

At the annual meeting of the Board of Directors of the Eastern Association of Fire Chiefs, held on February 13 at the Hotel Bellevue-Stratford, Philadelphia, Pa., June 3, 4 and 5 were selected as the dates for the annual Convention.

The Convention will be held at the Mayflower Hotel, an air-conditioned hotel and one of the largest in Washington. Even the meeting floor will be air-conditioned, so no matter what the weather may be, meetings may be conducted in comfort.

An outstanding technical program has been arranged, and a number of demonstrations are in prospect. It is planned to visit the U. S. Department of Agricultural Experimental Grounds and witness demonstrations of dust explosions. It is also planned to have an inspection trip through the U. S. Bureau of Standards.

Herewith is a diagram of meeting hall and exhibit spaces. It will be noted that the spaces surround the portion of the room set aside for meetings.

This arrangement will prove particularly satisfactory to manufacturers, for all activities are thus centered in one room.

Chief William J. Lutz, Fire Headquarters, Wilmington, Del., is Chairman of Exhibits and to him should be sent reservations for space.

Those in attendance at the Directors' meeting were: Chief Ross B. Davis, Philadelphia, Pa., President; Deputy Chief John J. T. Waldron, New York City, Vice President; Chief Edward H. Warr, Salvage Patrol, Baltimore, Md., Second Vice President; Chief George R. Lindsay, Hagerstown, Md., Director; Chief Wm. J. Lutz, Fire Department, Wilmington, Del., Director; Chief S. B. Conver, Ocean City, N. J., Chief Charles E. Clark, Wayne, Pa., Secretary; George Morley, Gamewell Co., and Fred Shepperd, Headquarters Manager of I. A. of F. C.

Chief T. H. Mahoney Retires

Chief Thomas H. Mahoney, 77-year-old head of the Westfield, Mass., Fire Department, retired on March 1.

He is a member of the Fire Chiefs' Club of Massachusetts, the New England Association of Fire Chiefs, and the International Association of Fire Chiefs, and has been a regular attendant at the annual convention.

He has been Chief of the Westfield Fire Department since 1910 and served as a member of the force for sixty-one years. He was born in Bath, Me., on May 22, 1859, and moved with his parents to Westfield when six years old. He was appointed a call fireman on October 5, 1876, and on June 1, 1877, became a regular fireman. At first he acted as "torch boy" and ran ahead of the hand drawn apparatus. He served with the Bay State Hose Company and Phillips Hose Company and occupied positions as secretary, treasurer, assistant foreman, and foreman of the local hose units. On May 1, 1894, he was appointed a member of the Board of Fire Engineers. On November 1, 1910, he became Chief of Department.

Under his leadership modern motor apparatus was installed and the department was placed on a two-platoon basis. In 1933 he was presented with one of the treasured "Half Century Certificates" issued by the Fire Chiefs' Club of Massachusetts in recognition of members who have given fifty years of service to their municipalities.

Chief Mahoney has served as forest fire warden for the town of Westfield for many years. He was President of the Westfield Firemen's Mutual Relief Association and is a member of the Westfield Lodge of Elks and the Ancient Order of United Workmen. He has designed several pieces of equipment especially for Fire Department use.

HARRY BELKNAP.

Signal Men Will Meet in Pittsburgh

The National Municipal Signal Association held its arrangements meeting in Pittsburgh, Pa., February 26, in conjunction with the Tri-State Chapter meeting, with approximately seventy members in attendance. The General Chairman, Charles G. Harris, Superintendent of Fire Alarms, Cleveland, Ohio, named his committee and the dates of the coming Convention to be held at the Hotel Statler, Cleveland, Ohio, August 30 to September 2.

Chief C. T. Donnelly, Lakewood, Ohio, has been named Chairman of the Entertainment Committee.

George McMannis, of the A. D. T. Company, 812 Huron Road, Cleveland, Ohio, has been named Secretary-Treasurer. James Marietta, Chief of the Electrical Bureau, has been named Chairman of the Program Committee.

H. A. Friede, Superintendent of Fire Alarms, Washington D. C., and Chief C. T. Donnelly have been appointed on the Exhibit Committee. These men will have charge of all exhibit space at the Convention.

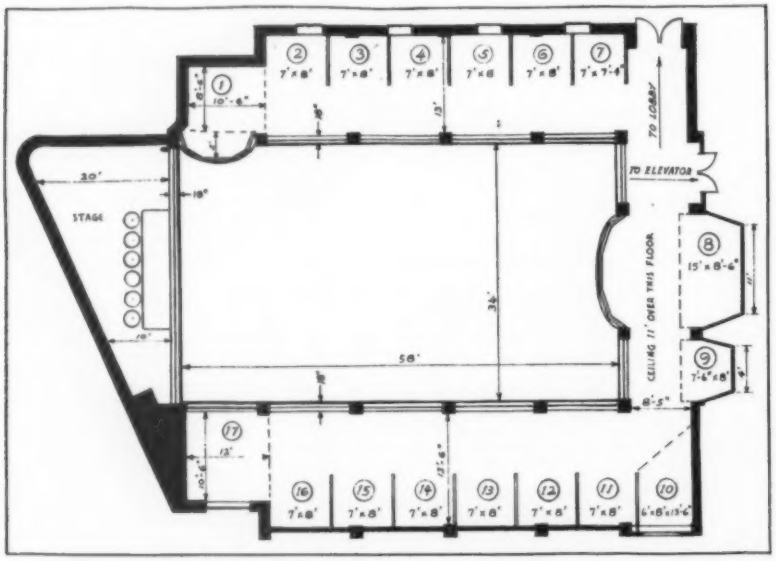
David Long, City Electrician, McKeesport, Pa., Chairman of the Technical Sessions Committee, will have a complete line of interesting papers with a full session devoted to the discussion of the Red Book or Code of N.F.P.A., on Fire Alarms.

Hardwick Chief of Kansas City

Thomas J. Hardwick has been appointed Chief of the Kansas City, Mo., Fire Department. He has been Acting Chief since January 19, when Chief Michael M. Mahoney was forced by illness to give up his work.

Chief Hardwick is forty-six years old and entered the fire service in 1912 as a substitute fireman. On December 12, 1922, he was made Lieutenant; Captain on May 19, 1926; Drillmaster on October 1, 1927. He attended fire schools at Chicago, Detroit and St. Louis, and since that time has been credited with establishing one of the outstanding drill schools in the country. On May 16, 1936, he was promoted to Assistant Chief but still retained control of the training school.

Chief Mahoney will be retained in the department in an advisory capacity. This was also done when Chief Alex Henderson, a former head, who retired ten years ago. Chief Mahoney is seventy-two years old and has been in the department since November 19, 1889.



Arrangement for Exhibits and Meeting Room of the Tenth Annual Convention, Eastern Association of Fire Chiefs, in the Italian Garden, Mayflower Hotel, Washington, D. C., June 3 to 5.

THE ROUND TABLE

For Practical Discussion of Current Fire Department and Fire Management Problems

DELAYED ALARMS CAUSED BY USE OF TELEPHONE

THE telephone, which has been the means of bringing the isolated home to the city, and rushing aid in times of trouble, has also, in many instances, been the cause of increased losses in time of fire.

The telephone has not been able to correct the many errors caused by panicky, excited persons reporting a fire. Humorous and serious incidents have occurred. The party will hang up as soon as the information is given that the Fire Department is wanted, the name of a place of business will be given instead of a street address and number, where there are east and west streets the wrong one will be used, street addresses will not be given very audibly, and where a person with a foreign dialect reports the fire, there are all kinds of trouble.

The problem in full that is discussed in this issue appears in the box on this page. Due to the length of the discussion, it will be continued in the next issue. Should you have some comments that you would like to add, you are invited to write to the "Round Table Editor," FIRE ENGINEERING, 24 West 40th Street, New York, N. Y.

Discussion of the Question

Edward W. Gieselman, Chief, Syracuse, N. Y.: We did have considerable trouble when we accepted alarms from the telephone operators themselves. In most cases, their unfamiliarity with the city, frequently led to mistakes in the transmission of alarms to us. We have adopted a new policy, which, I believe, has materially reduced the possibility of error in handling alarms of fire received by telephone. Under the new set-up, the telephone operators are instructed to connect the individual making the call with the fire alarm telegraph switchboard.

Our operator makes it a point to obtain from the person sending in the alarm, the address of the property involved, as well as the name of the nearest intersecting street. In this way, where the name of streets may sound the same over the telephone, the possibility of mistakes in transmitting the alarms is reduced to a minimum by giving the name of the nearest cross street, or intersection.

We are at present making tests with a loud speaker or amplification system, which has been installed in the engine house, and connected with the fire alarm telegraph switchboard. Through this arrangement, everybody on the apparatus floor receives the alarm over the loud speaker instead of just the one man who happens to answer the telephone. This, it would seem, would tend to reduce the possibility of mistakes in the transmission of alarms to officers and other members of the company by the man answering the call. Up to date, this has been working out most satisfactorily.

Personally, I have always felt that the safe and sure way to send in an alarm was by way of the box alarm. However, since most of the households today, have telephones, it is quite natural that most of our calls are being sent in by telephone, rather than by box alarms.

John J. McElligott, Fire Chief and Commissioner, New York, N. Y.: We have had trouble with alarms transmitted by telephone resulting in inaccurate reports, causing companies to respond to wrong locations; insufficient reports cause doubt and delay in directing companies to respond; inaudbile reports provide no response of companies at all.

All of the above occasioned delay and generally resulted in the spread of the fire beyond the point to which it would have been confined if the first report was properly made. Injuries and fatalities also resulted that might have been avoided if no delay was occasioned.

In addition to the three causes of delay mentioned, the following causes of delay have been experienced in New York City:

1. The lack of a coin has made it impossible to send in an alarm from a dial telephone. 2. Some people believe that only a five cent piece may be used to send in an alarm on a dial 'phone, whereas a quarter or a dime may also be used. 3. Reports of fires in neighboring cities and towns have been erroneously routed to the New York City fire alarm central stations. 4. Reports of fires originating in one borough have been received in another borough. 5. Incomplete telephone calls cannot be traced where dial 'phones are in use. Hence the telephone calls to report fires that have not been complete have usually been lost or delayed.

To avoid such delays a campaign of education that will acquaint the public with the following facts should be effective:

1. That the fire alarm box is the most dependable way to summon firemen.

2. That where the telephone is used, the person sending the alarm should be certain that they are connected with Fire Headquarters, that they give the correct address, that they answer any questions that may be asked of them, that they give the number of the 'phone from which they are calling, and that they follow up the telephone alarm by sending an alarm from the nearest street box.

Wm. Freeh, Chief, South Bend, Ind.: On numerous occasions fire alarms have been delayed in our city due to inadequate information, but the one foremost in my mind at this time is not only interesting, but also of a most tragic nature, resulting in great property loss.

On the morning of December 26, 1935, a still alarm was received for 221 Front Street. Having no such street in our city we decided that perhaps the call was a "hoax" or that the alarm should have been forwarded to a neighboring city, where an identical address is located. Both suppositions proved groundless and fifteen minutes later a box was pulled for this original fire which had grown in proportion from a basement rubbish fire to a conflagration.

The story behind this story is: A very excited clerk upon discovering this fire became panicy in telephoning the Fire Department and gave the address of his former place of employment in some distant city. As in most cases, realization of his costly error came too late.

I would suggest that to insure prompt, accurate transmission of fire alarms the public should be thoroughly educated in the relative importance of knowing the location of their near-

HERE IS THE PROBLEM

Have you had any delayed fire alarms due to use of telephone, where information given was inaccurate, insufficient or inaudible?

If so, what were the results?

What method would you suggest to insure prompt, accurate transmission of fire alarms by the public?

est fire alarm box and how to operate it. We stress this point most rigidly in our educational program for Fire Prevention.

Harvey Campbell, Chief, Irvington, N. J.: Our department has had some delayed fire alarms due to the use of telephones, especially by women, as they become confused, do not give the right location and hang up the receiver of the 'phone before we can respond. There is only one thing to do then. Have our operator check the next call coming in if it happens to be in the same locality, and in that way get the information straightened out. If a fire box alarm is received and is in approximately the same location, we know that it is the same fire.

The suggestion and method we offer to insure prompt and accurate transmission of alarms by the public is to try and discourage the use of the telephone and educate them in the proper way of sending alarms of fire by pulling a fire alarm box. We also urge them to acquaint themselves with the nearest fire box to their homes and place of business.

Lectures should be given in public places as to the right and only way of sending in an alarm of fire to the Fire Department for prompt responding. They should also be taught the importance of sending in alarms of fire and then staying at the alarm box and give the right location, for on many occasions they will leave after sending in alarms of fire. There is then a loss of time by firemen in locating the fire, especially if not noticed from outside of the building.

O. F. Romann, Chief, Cleveland Heights, Ohio: We have had quite a few alarms where the information was inaccurate.

In most cases the delay does not amount to much as far as time is concerned, due to the fact that both the Chief Operator and Operator at the telephone exchange listen in on all calls when a person calls the Fire Department by number or when they ask for the Fire Department. If it is a call of a fire, the Operator immediately checks the address given to the Fire Department against the address from which the call came. If incorrect, the operator immediately notifies the department of the error. They also make a record of all fire calls. We get very good cooperation from the telephone company in this respect.

My suggestion is to educate the public to the fact that in the excitement in giving an alarm the hazard to life and property is more than that of fire. If the person calling the Fire Department will remain on the telephone until the person answering the call repeats the address, it will save a lot of embarrassment for both themselves and the Fire Department.

Charles A. McGinley, Chief, East Orange, N. J.: Delayed alarms happen many times in a year, when a person reporting an alarm by telephone becomes excited and does not complete the call. Telephone central office operators often finish calls by telling our operator where the call came from, but nothing else. Only recently a telephone call was received for a fire on a certain street which has a north and a south direction. The party calling mentioned south. I checked this call personally with the man sending the call and he advised me that he thought he was on the south side instead of the north side. Fortunately it was only an automobile fire in the street, but the Fire Department never did reach the actual fire, because of not knowing where to go. Some ten minutes later the man called to find out why we did not respond. It was then we discovered what had happened.

Another incident happened when the driver of a fuel oil truck called for a fire in his truck. He called the Fire Department, heard the operator say "East Orange Fire Department," and then thought we received the call, having heard the operator. Service station employees extinguished the fire, after which this man called at Headquarters to find out what we have against him and why we did not respond. Upon checking we found that the telephone connection that was being used at that time went out of commission due to trouble just at the time our operator said "East Orange Fire Department," and the man calling believed that the call was completed. My experience has been that telephone calls for fires are unreliable and cause many delays.

The remedy, however, is within reach of all Fire Departments, and will insure accurate transmission of fire alarms. Install a first-class fire alarm system with sufficient street boxes to properly cover your city, and then educate the public as to how and when to use them. Sufficient fire boxes are in my opinion the best guarantee against delayed alarms. Delays seldom if ever occur when alarms are transmitted by street box.

Paul L. Ambeiser, Chief, Altoona, Pa.: We are particularly interested in the subject of delayed fire alarms due to the use of telephone, because we have a territory that has been annexed recently and the people there have no fire alarm boxes.

We find that the person calling in the alarm by telephone quite frequently is so excited that they do not give the proper location and some of the times just wait long enough to cry "Fire." They sometimes just give the address of the house or just the street number with no definite location.

This results in the company either staying in the house for the lack of information regarding the proper location, or many times going out on "wild goose chase," because the person was not calm enough to know just how to transmit an alarm of fire over the telephone.

We try to educate the people in the proper transmission of alarms over the telephone, by carrying periodic reminders on this subject in the local newspapers, the radio, and in the public schools. I think this the only way to reach the persons interested.

Ambrose Saricks, Chief, Wilkes-Barre, Pa.: We have had no delayed fire alarms due to the use of telephone. We have four women switchboard operators who are on continuous 24-hour service, and they do not let a person get off the line until the correct address and street number has been obtained.

To insure prompt transmission of telephone fire alarms by the public, I would suggest the public be instructed through daily papers as to the quickest possible way to notify the Fire Department of fires, trying not to become excited in giving the operators the necessary information as to the location, street and number of house where fire is burning.

E. F. Coop, Chief, Pasadena, Cal.: Quite a number of telephoned fire alarms originate from outside of city limits and in all cases some delay is experienced in ascertaining that fact, and then transmitting such alarms to proper districts.

Occasionally excited persons will cause slight delay by giving insufficient information, but generally such cases are held on the line by alarm dispatcher until more exact information is had.

An appreciable portion of telephone alarms are received under supervision of telephone exchange. Such persons not knowing the department number will simply dial the operator and report the fire to them. Telephone operators will hold them on the line and dial the department, after which location of fire is given again. The telephone company checks back on incoming calls to insure the origin of such calls and to report such supervised calls each month to the Chief.

We have experienced no extended damage from such delayed calls, as delays are of short duration.

One method to avoid delayed alarms, would be for the Fire Department, on annual residential inspections, to contact occupants to stress procedure to be followed.

Another method which might be practicable would be for the Fire Department to distribute cards which could be placed over the mouthpiece or which could be mounted near the phone, giving Fire Department number and instructing callers to be calm and give the required information.

An ideal method of insuring prompt and accurate transmission of fire alarms by the public would be a closer installation of fire alarm boxes, particularly in residential districts. Our high value district is fairly well covered, but the residential districts in our city, which probably is common to all, is less adequately covered. This forces telephone usage, and in comparison with fire alarm box transmission, is less desirable.

An excellent source of effective publicity is the encouragement of visits by school classes to our fire alarm office, where the operation of the system is fully explained, and the use of fire alarm boxes is stressed.

J. E. Parrish, Chief, San Diego, Cal.: To answer the question of delayed alarms the following may be said:

A party called fire alarm headquarters, saying there was a fire at the

THIS DISCUSION WILL BE CONTINUED

Due to the many who contributed to this discussion, the Round Table has been divided into two parts, and will be concluded in the next issue.

"Golf Club" on Rosecrans Street. It later developed that the fire was on a boat, anchored off a Yacht Club, east of Rosecrans Street, in the bay. This particular fire, an explosion of a Butane gas tank, part of a stove aboard the boat, severely burned two men, one of them later dying from injuries received.

In other instances, similarity in names of streets, such as "M" and "N," Fir and First, "L" and Elm, etc., have often caused delayed alarms with the result that the fire resulted in a greater loss than would have occurred if the Fire Department had received the correct location in the first report of the fire.

Since eighty per cent of our alarms are received by telephone, I strongly advise the education of the public in the use of phones for reporting fires, that is, calmness in calling the Fire Department, careful reporting of street and cross street where the fire is, and reporting of fires directly to fire alarm headquarters, rather than to telephone company operators.

Inasmuch as fire alarm boxes are foolproof as far as reporting fires is concerned, I am in favor of adequate and judicious distribution of these boxes.

However, since the telephone is the handiest method in most cases, education of the public in its use is advisable and necessary.

Luther P. Willis, Chief, Pueblo, Col.: We have very few telephone alarms given inaccurately. Last year 87.5 per cent of all of the alarms were telephone alarms and not over three caused serious results. I am, however, in favor of ample street fire boxes to cover all districts.

George B. Goff, Chief, Oklahoma City, Okla.: We have some delay on a small percentage of the telephone alarms due to several reasons:

First: The fire alarm operator sometimes finds it difficult to understand the person giving the address of the fire due to excitement; the person is sometimes foreign and does not speak the English language clear enough for the operator to understand; the human element enters into the transmission of a telephone alarm from two to five times, in which case where the alarm is transmitted from one person to another, there are two chances for a mistake. We find in some cases telephone wires have been damaged by fire before the alarm has been turned in, and when the person attempting to turn in the alarm attempts to get the Fire Department, he finds out that the 'phone is out of order. This causes considerable delay. We find that in some cases where the Fire Department officials attempt to call in the second alarm or further alarms, that the wires have been damaged by the fire, which causes delay.

In all cases where there is an alarm of fire delayed, the results are greater loss to property and in some cases, a loss of life.

The question of quick, prompt, and accurate transmission of fire alarms by the public is a question that requires building up by training as long as the telephone is used. Children should be taught that when they see a fire, they should call the Fire Department and not take any one's word that the call has been made.

It seems to me that some certain kind of a quiz or examination could be worked out, where all the children would be asked questions pertaining to fire and fire protection, at which time the proper instructions could be given.

As to variations of fire alarms, where the man on watch or the operator has received it wrong, a large percentage of this can be eliminated by the use of the radio, where you can verify the alarm address while you are enroute to the fire.

James C. Sullivan, Chief, Lowell, Mass.: On April 8, 1935, there was a fire at 670 Princeton Street. Telephone alarm was received at 2:20 p.m. It was transmitted by a woman who stated that there was a fire at the Paramount Tea Room and hung up before the operator could ascertain the address. There are two such tea rooms in our city, one at the address given above and another at Princeton Boulevard and Pawtucket Boulevard. Two of the companies went to the tea room on Pawtucket Street and the other two companies went to the Paramount on Princeton Street. Immediately arriving at the tea room where the fire actually was, the officer in charge ordered a bell alarm. This was the only method which could be followed.

The means to eliminate such delays is to sound alarms from fire alarm boxes wherever possible. This the public is instructed to do each year during Fire Prevention Week, both through the press and over the radio.

John A. Fisher, Chief, Duluth, Minn.: We have had no delayed alarms due to the telephone. We repeat our locations three times on telephone alarms. For instance, should we receive an alarm at 122 E. Second Street, it would be transmitted as 1-2-2 East 2 Street. This avoids confusion when numbers sound similar.

Every citizen should acquaint themselves with the nearest fire alarm boxes to their home and business and know whom to call by telephone in case of fire. Radio equipped cars of Chiefs and Assistant Chiefs serve as a double check on all locations, either box or telephone.

R. J. Scott, Chief, Los Angeles, Cal.: Due to the size of the city of Los Angeles (over 450 square miles), at least 75 per cent of the total area is outside of the metropolitan alarm system. Therefore, the major portion of this city is dependent almost absolutely upon the telephone system for the transmission of alarms. This has worked out with reasonable satisfaction.

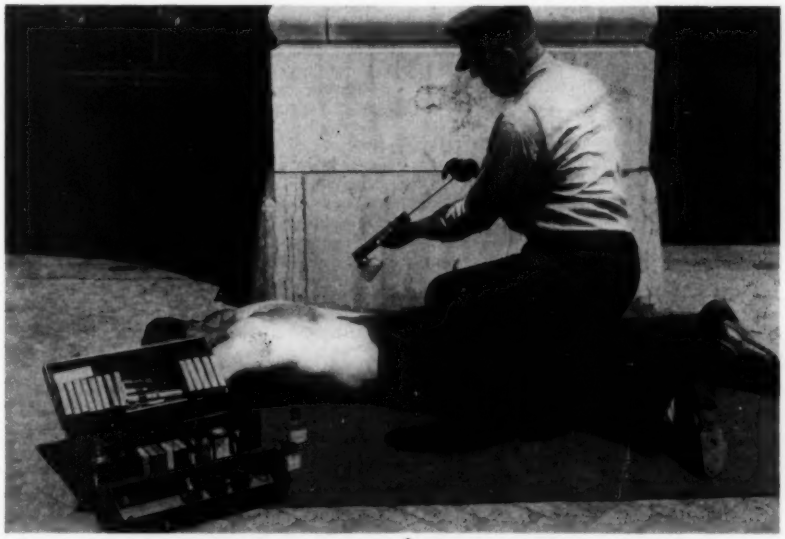
This department hopes, at some time in the future, to be able to extend the alarm system to the city limits, thus providing two supplemental methods of alarm transmission, in my opinion a considerably better arrangement than either system by itself.

J. H. Davidson, Chief, Houston, Tex.: Very seldom is an alarm incorrectly received over the telephone. Should it be, it causes very little delay, for it is common practice for people sending in a still alarm to follow it up with a box alarm.

If an incorrect location is given by a party turning in alarm by telephone and they do not follow it up with a box alarm, and the company is dispatched to this wrong location, the operator must wait for a second call for the correct location.

Fire alarm boxes, I think, are the best method to insure prompt accurate transmission of fire alarms by the public.

W. G. Lutkey, Chief, Oakland, Cal.: There have been no delayed alarms that we know of, due to their transmission over the telephone. The best method of procedure to insure against any such delay is to educate the public to turn in alarms through nearest fire alarm box. Through the Public



Kit for First Aid Treatment of Burns

The kit shown above was devised by the Okmulgee, Okla., Fire Department for emergency use in the treatment of burns with tannic acid.

Relations Bureau of the Fire Prevention Bureau, lectures are frequently given before civic clubs and other assemblies. Boy Scout groups, Camp Fire Girls meetings, P.T.A. and others. The methods of turning in fire alarms are explained during such talks. Instructions in turning in fire alarms are also taught in our public and private schools.

Lawrence E. Reif, Chief, New Haven, Conn.: We have had some short delays in alarms by using telephones, on account of streets with duplicate names. We annexed three different sections to our city and the names of streets which were the same as ours have never been changed.

We try to educate the people in finding the nearest fire alarm box to their home or place of business, and to use the same in case of fire. They are instructed to stay at box to direct the apparatus.

J. N. Sullivan, Chief, Utica, N. Y.: On several occasions garbled alarms have been received. Dial 'phones make tracing bad alarms impossible. One such fire alarm caused a loss of life. To overcome this difficulty fire alarm boxes properly spaced and visible from every building in the city, plus publicity on the prompt use of fire alarm boxes in emergency, would be of material help.

M. P. Leonard, Chief, Erie, Pa.: We have found the telephone a very thorough and reliable instrument in reporting fire. Our records show that 65 per cent of the calls are received via telephone. The telephone company has assigned a special number for fire calls, in our case 171. This number is a direct connection with the signal station and cannot be used except in reporting a fire. Delayed alarms may result from party lines, that is lines being busy or out of order.

Fire alarm boxes should be distributed not too far from each other. The residents should know the location and operation of the boxes. The various automatic systems installed in manufacturing and business places for transmitting alarms to Headquarters insures prompt service.

A. C. Du Ree, Chief, Long Beach, Cal.: We have experienced exceptional satisfactory results with telephone alarms. The delayed alarms are practically nil. On a fire that is visible, several calls are usually received and the location will vary a few blocks, but not to the extent of delaying a response.

In my opinion, the only way to insure prompt and accurate transmission of alarm is to install in every structure, a small coded signal box—either automatic or manually operated, connected to a street fire alarm box. This auxiliary should be made compulsory—and a part of a utility such as a water, gas or electric meter.

A. G. Derra, Chief, Schenectady, N. Y.: We do not have many delays due to alarms transmitted by telephone. On a few occasions, apparatus went to the wrong location, due to the fact that two streets of the same name are in widely separated sections of the city. However, no serious harm was done, as the error was quickly discovered and the Fire Alarm Bureau was notified.

To avoid this trouble, frequent press articles should be run, advising residents if not equipped with 'phone, to ascertain the location of the nearest fire alarm box.

John J. Kelly, Chief, Scranton, Pa.: 'Phone alarm companies were sent to wrong locations, and frequently a box was pulled at the scene of the fire, and a second alarm company responded, due to the fact that the first alarm company was sent out to an inaccurate 'phone call.

I believe that the telephone company could accomplish a good deal in the transmission of an alarm correctly by inserting a notation in a conspicuous form of lettering on the outside of the telephone book cover, instructing its subscribers the correct method of transmitting an alarm and how to reach the fire alarm operator at once.

Maurice Keating, Chief, Rochester, N. Y.: During the year 1936 we responded to 2,999 alarms, of which 1,874 were telephone alarms. We have had very little trouble with delayed alarms. Our experience is that a box alarm will follow the telephone if the fire is of any consequence.

All telephone alarms should be followed by a box alarm, if it looks like a "fire" and this would insure against unnecessary delay on the part of the Fire Department in responding to a fire.

W. R. Williams, Chief, Fresno, Cal.: We have, on numerous occasions, had difficulty in the proper receipt of information when citizens were attempting to report a fire by telephone.

This is due to the inability of getting the correct address and location under conditions of stress and excitement, as people usually are when reporting a fire by telephone.

Our city has the old alphabetic street names and in many cases it is difficult to distinguish between the letters "D," "E," "P" and "T," particularly so if someone who speaks a foreign tongue is attempting to report the fire.

There is also the problem of dual or partial dual named streets. For instance, "Michigan" and "Michigan Way," "Tulare" and "East Tulare." People do not always give you the full name of the street, causing considerable confusion and delay. These conditions in our city have frequently caused delays which resulted in a much greater loss than would have been the case had proper and definite information been received.

There is only one remedy, in my opinion, and that is the complete and proper distribution of fire alarm boxes, adequately maintained and a thorough educational campaign among your citizens to teach them always to use the fire alarm boxes in case of fire.

Pumper Tested for Brookline

A test of the new American-La France centrifugal motor pumping engine recently delivered to the town of Brookline, Mass., was held on February 25 under direction of Chief Selden R. Allen, of the Brookline Fire Department, and P. C. Charnock and J. W. Hughes, of the New England Insurance Exchange. The tests were held at the reservoir in Brookline.

Luncheon was served at the testing grounds by courtesy of the American-LaFrance and Foamite Industries, Inc.

The new engine has a special squad body with booster tank beneath the floor and two hose compartments. The pump is housed forward of the driver's seat beneath the engine hood.

The Man With Nothing To Do

A local newspaper of Murphysboro, Ill., is publishing a series of articles describing some of the prominent people in the community. The first of the articles described the well known fire official, Chief Albert Herring.

For those who complain of too much to do, it is breath-taking to read the list of the activities of Chief Herring as enumerated in the article:

"Chief of Murphysboro for thirty-six years; Supervisor of Cemeteries; Member, Park Commission; Electrical Inspector; 'Dr. Fish' of the Hospital Staff; Chief of Western United Safety Team; Originator and Chief of Egyptian Fire Fighters Association; Vice-President, Illinois Firemen's Association; Member, Western Electric Inspectors' Association; Honorary Member, Pacific Coast

Chief Al Herring

Fire Chiefs' Association; Member, Southern Regulars of I.A.F.C.; originator, twenty-one years ago of fire prevention in public schools, which is now national in scope; Elks Lodge, Eagles Aerie; 'Santa Claus'; Recognized by St. Louis Fire Chief and staff as outstanding small city Chief and presented with diamond studded service badge.

"His hobby is to do something for somebody.

"'Al,' every citizen knows, has been the town's official 'handy man' for twenty-five years, and is unofficial Chief of all charitable enterprises, such as community Christmas trees, community chests, hospital drives, and tag days for any and all worthy enterprises. When they 'let Albert do it' it always gets done."

Clarksburg May Vote on Bond Issue

Unless action is taken by the legislature, the voters of Clarksburg, W. Va., will be called on to pass a $50,000 bond issue for the purchase of fire equipment. A bill will be presented to the legislature calling on insurance companies to pay two per cent of the premiums.

Questions and Answers

NOTE—Readers are invited to send in questions, which will be answered in the order received. Names are omitted from questions unless otherwise specified

Nozzle Pressure Greater Than Engine Pressure

To the Editor:

Is it possible to get more pressure at the nozzle than you have at the pumper or hydrant?

I would appreciate your opinion.

T. M. C.

Answer: Yes, it is possible to get more pressure at the nozzle than at the pumper or hydrant, provided the nozzle is at a point lower than the engine. For instance, if the engine is pumping through a line laid down hill, the pressure at the nozzle may be greater than that at the engine, for the nozzle pressure in this case will be equal to the engine pressure plus the static head from the engine down to the nozzle, minus the friction loss in the line. If the friction loss in the line is less than the static pressure, the nozzle pressure will be greater than the engine pressure.

Maximum Vertical Reach of Stream

To the Editor:

Is it possible for a motor fire engine of 500 g.p.m. rated capacity to throw a fire stream 130 feet in the air from a hydrant at 60 pounds pressure?

The above engine is in good condition and I believe that by using a 1⅛-inch smooth bore nozzle, and no more than 100 feet of 2½-inch fire hose, or by using two 100-foot lines and a siamese and a nozzle pressure of about 150 pounds, that it can be done.

I have been told that with a nozzle of proper size, the vertical height of a fire stream is equal to one foot for each pound of nozzle pressure, but I have found the results to be somewhat less than this in actual service.

According to my figures, the above hose layout and nozzle pressure would require the full given capacity of the pumper, and the nozzle is the largest size that could be used with that pressure. However, I think it can be done with the aid of good hydrant pressure.

L. T. K.

Answer: Carefully conducted tests, made by John R. Freeman some years ago, show that 1⅛-inch nozzle at 70 pounds pressure will throw water to a maximum height of 130 feet. This is the height of the extreme drops, and not the average height of the entire stream. The tests conducted by John R. Freeman were made in still air. If there is a slight breeze blowing, the range of the fire stream is very materially reduced.

With the nozzle pressure of 100 pounds on a 1⅛-tip, the maximum reach of a stream vertically would be in the neighborhood of 150 feet.

As to range of an effective fire stream, that is, where 85 per cent of the water passes through a ring 15 inches in diameter, I do not believe you could get more than 125 feet vertical reach at 150 pounds nozzle pressure, even under the most ideal conditions.

The stream has a tendency to break under higher pressures, and the range is materially decreased thereby.

From the nozzle, the stream spreads out very much, and while the drops traveling the farthest distance may reach a maximum height of 150 feet, the point at which 85 per cent of the stream passes through a circle of 15 inches in diameter is probably less than 130 feet.

Friction Through Pump

To the Editor:

On several different occasions I have had the opportunity to lay a line of 2½-inch hose from last plug to fire engine pumps. How much friction loss will be created by making this connection? The reason I make this layout is that I use the pump for a siamese.

J. F.

Answer: While no experimental data are available covering the friction loss through fire engine pumps, it is my belief that the additional friction loss incurred by passing the water through the pump via churn valve connections would not be more than five pounds. Of course if the flow were very great, this figure would probably be increased but with a single line of 2½-inch hose stretched 200 or 300 feet, the amount of water traveling through it would not be great.

Discharge at Low Pressures

To the Editor:

Will you kindly answer the following questions?

If a second size pumping engine is rated say 700 gallons at 120 pounds pump pressure, what would the pressure be at 100 pounds? Would this increase the capacity? If not, then will you please enlighten me on how this problem is done?

M. M. S.

Answer: A pump will give more than its rated capacity at less than 120 pounds. The extent to which the discharge will be increased will depend upon the type of the pump and the maximum safe speed of the motor which drives it.

For rough calculations, it is generally assumed that pump discharge varies inversely as the discharge pressure. This holds only within narrow limits, however, for you will find upon calculation that at very low pressures the discharge will be tremendous.

The rule for finding discharge at any given pressure is to multiply the rated capacity by the rated discharge and then divide by the pressure at which you wish to find the discharge.

In the case you cite, 700 x 120 ÷ 100 gives 840 gallons per minute, which will be the discharge at 100 pounds pressure.

Breaking Water Into Component Gases

To the Editor:

Will you kindly answer the following questions?

A statement was made that upon some occasions water thrown upon fires is broken up into its component gases by the intense heat and causes the fire to burn with greater intensity.

1. What percentage of fires does this condition embrace?
2. What conditions must be present?
3. At what temperature does this occur?
4. If this happens, what precautions should be taken?

R. V. B.

Answer: At very hot fires you may expect this phenomenon, but it would make no difference in the intensity of the fire.

It requires just as much heat to break up water into component gases as is created by the combustion of these gases at fires, so that there is neither gain nor loss in this case.

As a matter of fact, this process would take place without the men operating at the fire ever knowing it.

There was a theory in vogue a few years back that the creation of free oxygen and hydrogen would intensify the fire materially. This theory is unsound, and is not so prevalent today.

Pressure Discharge, etc., from Fog Nozzle

To the Editor:

Will you kindly answer the following questions:

1. What would be your procedure in removing a burst length of hose from a line that was stretched from a

pumper, up the face of a six story building to the roof. Two lengths of hose being on the roof, the second length from the play-pipe being the burst length.

2. What pressure is required at the nozzle of a large fog gun connected to a 2½-inch line, in order to perform efficient work? What would be the discharge per minute and the friction loss per 100 feet of hose? What is the reaching distance. J. A. D.

Answer 1. To remove a burst length of hose from a line on the roof of the building, the first thing you do is to order the water shut off at the street. Disconnect the line on the street, at the next coupling to the building, and put in a good length of hose. Remove the roof rope from the hose and around the chimney, and hoist the line to the roof. Take out the burst length on the roof, recouple up again and let the hose come back over hose-roller on cornice and make it fast again with the roof rope as it was before.

Answer 2. Around 125 pounds is required at the nozzle of a large fog gun connected to a 2½-inch line, in order to perform fully efficient work (this applies to one design of fog nozzle).

With 125 pounds pressure at the nozzle, the discharge would be from 40 to 65 gallons per minute, depending upon the size of the nozzle. There are, of course, several different sizes of fog nozzles.

The friction loss in 2½-inch hose for a flow of 40 gallons per minute is approximately ½ pound per 100 feet. The friction loss in 2½-inch hose, where the flow is 65 gallons per minute, is approximately ¾ pound per 100 feet.

Where the flow is 40 gallons per minute the effective horizontal reach is 18 feet.

Where the flow is 65 gallons per minute, the effective horizontal reach is 30 feet. In each case the nozzle pressure is approximately 125 pounds.

Cavanaugh Chief of Waterbury

Deputy Chief Thomas F. Cavanaugh of the Waterbury, Conn., fire department, was promoted to Chief of that department on February 3. Chief Cavanaugh replaces Chief Thomas J. Lynch, who was retired by the Board of Fire Commissioners upon his own request. He has been in ill health for some time past. Chief Lynch was head of the Waterbury department for the past two years and a member of the department for forty-one years.

Chief Cavanaugh is a veteran fire-fighter and joined the department on May 8, 1905. He was promoted to a Captain on August 28, 1908. When retiring Chief Lynch was named Chief of department on January 2, 1935, upon the death of Chief Henry H. Heitman, Chief Cavanaugh was promoted to Deputy Chief.

Since his many years of association with the fire-fighting profession, he has made many friends throughout the state and his promotion is well received by the entire personnel of the Waterbury department where he has been a favorite with the men since becoming an officer.

THOMAS F. MAGNER.

By William Paul Babcock

ARE you doing salvage work now? Are you asking for any salvage covers in next year's budget?

If not, why not?

I know as well as any of you how difficult it is to persuade Village Board members and Commissioners that they should include the cost of at least a half dozen salvage covers.

It took a few years to get the idea across in Nyack, after we had spent our own hard-earned dollars for covers.

So, thinks I, it might help if I give you boys out there a few tips on how to do it.

Now, don't get the idea that you can accomplish miracles by telling your "Commish" that some writer in a fire journal said so-and-so. You and your gang must get busy and *do things* and eventually, maybe not right tomorrow, your acts will bring results.

First of all *you* must be sold on the *fact* (I defy contradiction) that salvage work, particularly the use of salvage covers, is just as important as any other phase or evolution of fire fighting. Why? Because *most* of the damage done at fires is by the water *used* (I didn't say needed).

Emphasize the undeniable fact that you are organized to save life and property and neither your charter nor any law specifies what tools to use.

Point out that your Secretary does not send out postal cards for fire, because he doesn't know when they'll occur, nor where, and the *next* one may be at the Commissioner's home. And I'll bet a good cigar the "Commish" is right now *under insured*. And remember that adjusters (never too liberal) chisel most on smoke and water damage. But, if he has a factory, a store or an office, and supposing he carries 100 per cent coverage, ask him how long it would take him to get cleaned up and rolling regular again after the mess of a fire, and then ask him to estimate the loss of business during that period. Hidden losses like that are usually overlooked.

An indirect way of accomplishing the same thing, may be even better than going direct to the Village Fathers, especially if they are commuters and have little chance of first hand experience with salvage benefits, is to canvass your merchants and manufacturers, soliciting a small donation from each to cover the cost of a few covers, using the arguments already outlined. You have solicited for much less worthy causes and less beneficial to the donors. You can honestly state that this donation will be an *investment*—"bread upon the waters."

Set your mark at six covers, especially if you have none now. The total cost for the type best suited to small departments will be about $105, which sum, divided among the business and professional men in even a very small community, will tax each of them so lightly they will not refuse you. When you get these covers, study every possible means of using them, in fires and other emergencies, and through them *prove* to the entire community what a boon they are and what alert, intelligent fire fighters *you* are. Then use the pressure of public opinion, spurred by those who have benefited directed by your operations, to get covers included in the next budget.

You are almost certain to have a couple of fires in a year in which covers can be used to good effect and these will be the proof of the pudding.

After all, if you are engaged in volunteer fire service, you must not expect to walk right into the Council or Board meeting and come out with *everything* you ask for. And this reminds me to suggest that you might ask for a little *less* of other items and substitute a few salvage covers.

Well, I've supplied you with the ammunition, and from here it is up to you; although I should be glad to furnish more arguments or other advice you may ask for.

P. S.—Congratulations to you, Chief McAuliffe, of the Chicago Patrol, on that fine new truck! Since I met you in Capt. Sid. Johnston's office, shortly after you took the reins, you certainly have gone places in salvage work. More power to you!

Chief Bogardus Celebrates

Chief G. W. Bogardus, Norwalk, Conn., a fire-fighter for fifty-three years and active head of the department for twenty-five years, recently observed his seventy-first birthday. He just returned from a five weeks' vacation spent at St. Petersburg, Fla. Members of Central Headquarters arranged a surprise party for the Chief.

Darien Orders Pumper with Closed Cab

The Darien, Conn., Fire Department has ordered an Ahrens-Fox 600-gallon triple combination pumper. The apparatus will be equipped with a closed cab, which, it is claimed, will be the first of this type in the state. William Handley is Chief of the Fire Department and Chief James Tiano is First Assistant Chief.

Chief Campbell, Passaic, Dead

Chief James J. Campbell, appointed head of the Passaic, N. J., Fire Departmtnt but six months ago, died at a local hospital as the result of a heart attack, on February 22. He had been a patient there since February 4, because of acute indigestion. He was about to be discharged, and received the attack as he was preparing to retire for the night.

Chief Campbell was Chief of the volunteer fire force, before joining the paid department, at the time it was organized twenty-seven years ago. He spent thirty-four years in the service of the two organizations. Chief Campbell was fifty-five years old.

Beside his widow he is survived by three sons and two daughters.

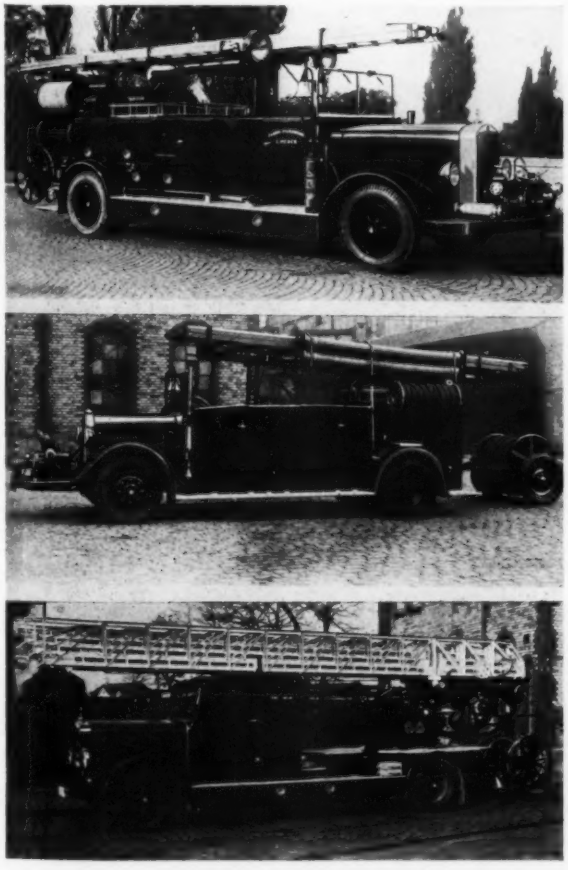
Asst. Chief William H. Coffrey has been appointed Acting Chief.

Old and New in German Apparatus

History of Fire Fighting in That Country—Gasoline Engines Introduced in 1895—Closed Apparatus Now Used Extensively

By BERNARD PEILL
Berlin, Germany

FIRE fighting in German cities and towns already had begun at the end of the Middle Ages and the first German fire apparatus were invented about 1400 in Nürnberg, when small hand-pumps were built there for the city of Frankfort. Better fire engines came in use about 1560, in Augsberg, Bavaria, and again in Nürnberg, about 1650, but they had neither wheels, hose or steady pressure. It was not until the Dutchman, Van der Heyde, had invented modern fire engines and hose, about 1675, that this invention came from Amsterdam to Germany. Two and four-wheeled hand-fire engines were in use in the latter country about 1700. In the 18th and 19th centuries most of German fire engines had leather hose. They were not able to take suction from wells, rivers, etc., but must be filled by buckets or barrels. Water works and hydrants were first introduced in Germany about 1830, in Hamburg, which had at that time, also, the best organization of volunteer firemen. In spite of that, however, the city was almost destroyed by the conflagration of 1842, when more than 20,000 houses burned down within three days.



Upper—Apparatus Which Can Fight Fires Simultaneously with Water, Foam and CO_2 Streams. Center—Apparatus for German Volunteer Township Department. Besides Pump in Front, It Is Equipped with a Portable Motor Pump Carried at the Rear. Lower—150-Foot Aerial Ladder. The Ladders Are of Steel

The First Steam Fire Engine

The first steam fire engine, invented about 1829 in England, was bought by the King of Prussia, about 1830, and sent to Berlin, where this apparatus succeeded in stopping a dangerous conflagration in 1835 and was used by the Royal Fire Brigade until the adoption of a water works and hydrant system in 1856. The first German steam fire engine was built by the Moltrecht Factory, of Hamburg, in 1864 and used by the Hamburg Volunteer Fire Department until the organization of the Professional Fire Brigade in 1872, which then began to use English steamers. But at the same time, Egerstorff, in Hanover, and Krauss, in Munich, had begun to build steam fire engines of their own, so that, since 1880, English steamers only were used by the Fire Brigades of Hamburg, Bremen and a few other German harbor cities. The first steam-driven automobile fire engine was built in Germany about 1885 and, until 1910, most of the larger German Fire Departments employed automobile steam fire engines.

Gasoline Motor Fire Engines Introduced

When gasoline motors were created by Daimler and Benz about 1885, it was not long—about 1895—before horse-driven, but gasoline worked motor fire engines were built for the Fire Departments of Strassbourg and Erfurt. However, it was almost 15 years before gasoline motor cars were fitted with pumps. Meanwhile, most of the larger German Fire Brigades procured for themselves, within the period from 1900 to 1910, motor fire apparatus, such as hose-wagons, chemical engines, aerial ladder trucks and steamers, which were propelled by storage batteries, and at last, electric wheel motors were propelled by generators, getting their power from gasoline motors. So it was quite a considerable improvement when the first pumper, directly propelled by a gasoline motor, which also was connected with the centrifugal pump, was put in service by the Fire Brigade of Frankfurt-on-the-Main in 1908-9.

Some Hand Drawn Machines in Use

Since that time, gasoline-propelled motor pumpers were introduced by most larger German Fire Departments until the World's War. The experiences of the army during the war caused soon the creation of hand-drawn motor fire engines and trailer pumps, which have been bought since 1920 by most volunteer departments

A Berlin 400-Gallon Closed Pumper.

of towns and villages and also introduced for protection of suburban districts in larger cities.

Small Pumps in Use

Since 1925, several German fire apparatus factories have begun to produce "portatif" pumps, which have a small bicycle motor and a strong pump, and which can be taken to a fire by two or four firemen. Those pumps have 15 to 30 horsepower and can give about 1,200 gallons of water a minute, while reaching a head of 200 feet and pumping water through about half a mile distance. Modern German pumpers have their centrifugal pump before the radiator and at the rear of the chassis a box with a small motor pump which can be taken off and brought to rivers, wells, etc. As to the outside look of German fire apparatus, they resemble in many cases a closed private car or, better, a "bus." This is of great value to the health of firemen in winter or while returning from a fire. Not only pumper and squad wagons in Germany are entirely closed bodies, but also hose wagons, emergency cars and aerial ladder trucks.

Two-Wheeled Aerial Ladders in Use

Until 1850, German firemen only were able to use heavy and impractical extension ladders, but since this time, two-wheeled aerial ladders have been introduced by German manufacturers. Those two-wheeled aerial ladders were used until the end of the 19th Century by most German Fire Departments, but about 1890 a manufacturer in Colonia created the first horse-driven turntable-ladder truck which was introduced since 1895 in Berlin and other larger cities. At the same time a maker in Frankfurt built a turntable-aerial ladder entirely of steel and aluminum, which was erected not by hand, but by compressed air and later on by CO_2. Meanwhile, a manufacturer had begun to build aerial ladder trucks with wooden ladders and driven by horses, but soon also put them upon steam or electric propelled truck. In 1914 this maker delivered the first entirely gasoline propelled and erected aerial ladder truck to the city of Görlitz, Silesia, and after the war, all German motor aerial ladder trucks have been built in this way. The German aerial ladder-trucks do not have either chassis or tillerman, as in America, but are directed by only one driver and erected within about half a minute to a height of 85 to 170 feet. But these ladders are used, of course, only by larger Fire Brigades, while smaller German departments are using hand-erected aerial ladder trucks or two-wheeled ladders, which are mounted, as in England, often upon the rear of pumpers, etc. Extension ladders are now the same as used in the United States, while scaling or pompier ladders of the American type are now forbidden in the whole of Germany by the Law of Prevention, because of the danger of accidents.

As to German fire hose, it is of canvas and rubber, but not so large and heavy as American hose, because the German firemen use little water and moderated pressure, the buildings being more fireproof than in America and the possibility of conflagrations not so great.

The most important recent invention is the creation of the German air-foam appliances, which are now used by most larger departments and by which Hanover Firemen succeeded last year in bringing a large oil well fire under control within about two days.

A 400-Gallon Pumper and 85-Foot Aerial of the Berlin Fire Brigade

The city of Greater Berlin has now about 4,125,000 population. The Professional Fire Brigade consists of about 1,800 officers and men, with 36 fire stations and about 100 companies. There are 160 motorized apparatus, 6 fireboats, 12 trailer pumps, 35 motorized aerial motor trucks, and 30 chiefs' cars. The volunteer Fire Department has about 2,200 men, and about 150 companies, with 70 fire stations. It has about 40 motorized apparatus, besides a number of horse and hand drawn steamers, chemical engines, hose-carts aerial ladder trucks and hand fire engines.

Gasoline Truck Crashes

About 4,200 gallons of gasoline were ignited when a gasoline transport truck crashed into a milk delivery truck on a highway one mile south of the city limits of Winfield, Kan.

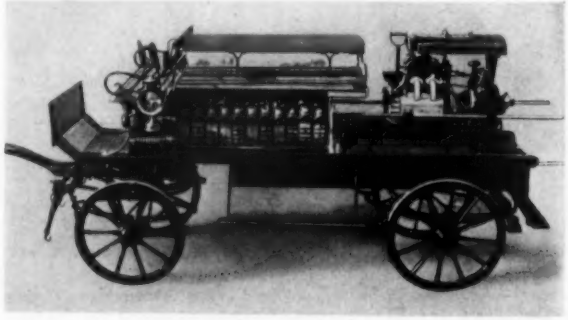
The transport, which was on the main road, hit the smaller truck that came in from a side road. The smaller truck was pushed off the bridge and dropped forty feet below. The transport followed, and fell on the river bank.

Although the department was called, it could do nothing. The only water available was that from the river, and, because of the raging fire, it was impossible to drop a line from the bridge. For a time conditions were very serious. Had the gasoline tank exploded it would have sent burning gasoline down the river to endanger any farms along the banks.

Both drivers escaped with minor cuts and bruises.

Since this fire and accident occurred on the state highway, outside of the city limits, state officials and Fire Departments are confronted with a problem that will require a great deal of time and study.

LEE L. HAMM.



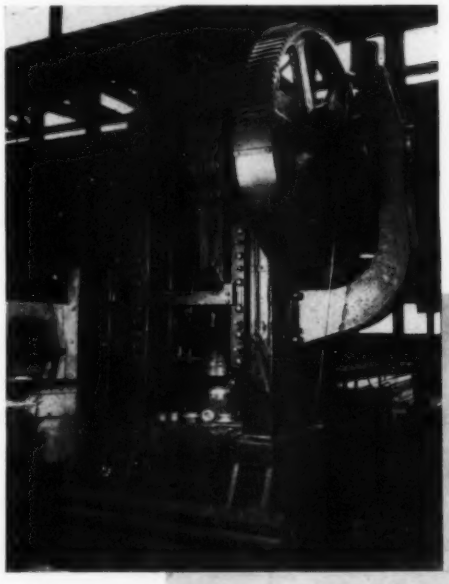
A Modern Horse-Drawn Fire Truck, with Portable Motor Pump, for German Rural Fire Fighters.

HERE IS THE SOLUTION TO THE MYSTERY!

HERE is the LATEST Bi-Lateral light-weight fire hose, weighing 45 pounds to the section uncoupled and will withstand a pressure of over 900 pounds. The weave is fine and our tests prove that the abrasion is approximately 30% better than that of the coarser weaves. This will enable the firemen to carry a full load to a fire without having to drive back for additional sections when an extra line is needed. The pliability enables them to get water on the fire quicker than that possessed by the heavy stiff hose.

Let our representative explain this to you.

JUST THINK—A DROP-FORGED ROCKER LUG COUPLING INSTEAD OF A CAST COUPLING

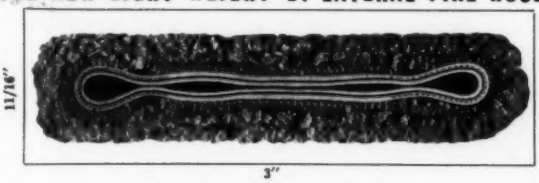


The 600-Ton HAMMER which makes the ROCKER LUG DROP-FORGE COUPLING

•

Forged with bands to protect the swivel.

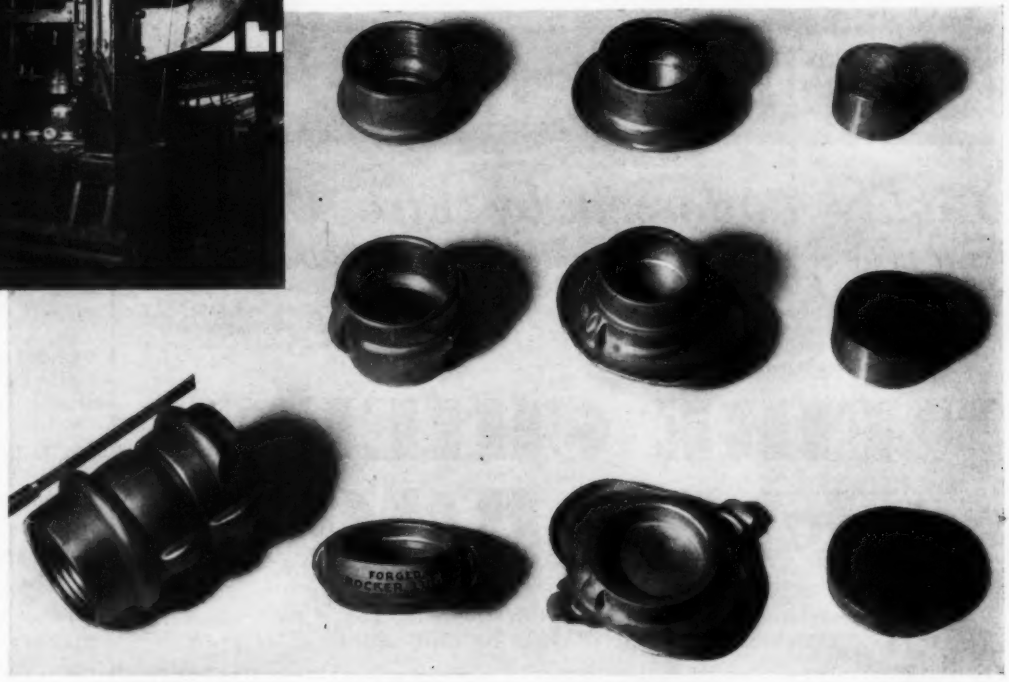
THE NEW LIGHT WEIGHT BI-LATERAL FIRE HOSE



Displacement—3x11/16 inches

Note the tube—three sheets of rubber calendered together with the fabric insertion between the outer and second tube at the Bi-Lateral points.

Old man coupling, old man coupling
We surely got your number
We surely got your goat
We simply tie your hands
With two little bands
So strong.
And when you're pulled off the wagon
Or thrown off the building
You can't strike the swivel
You can't strike the swivel
Which will keep on turning,
When you want to turn it around.



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This drop-forged coupling can be given any expansion. If flattened, it can be straightened out without cracking. When dropped on the pavement, the two bands protect the swivel.

This coupling will save your city at least 20c. per foot on the cost of your fire hose because it can be used over and over again. Attached to BI-LATERAL HOSE as regular equipment.

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By FRED SHEPPERD

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THERE have been books on fire-fighting, but never anything so complete and authoritative as the "Fire Chief's Handbook." This book, a gold-mine of practical, helpful data, gives a reliable, up-to-the-minute answer to almost every question that might come up in modern fire-fighting practice.

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- FIRE STREAMS
- FIRE-FIGHTING METHODS
- FIRE STATION DESIGN
- TRAINING OF FIREMEN
- SALVAGE OPERATIONS
- BUILDING INSPECTION
- VENTILATION AT FIRES
- CARE OF FIRE HOSE
- CHEMISTRY OF FIRE
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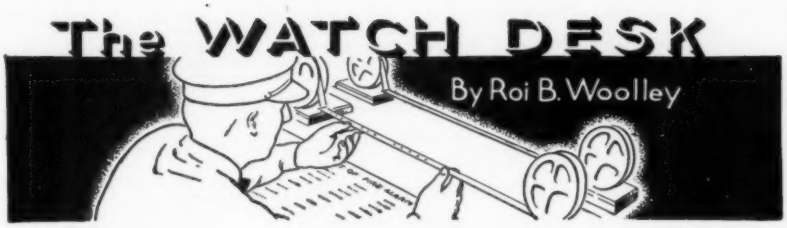

Our inquiring reporter overhauls the firemanic news of the day.

Egg-Sucking Fire Dog

The great egg mystery of Newark is solved. For weeks a grocery store manager had been baffled by mysterious disappearance of eggs—one, two or three a day. Unknown to him, mystery likewise bedeviled the fire house next door, where firemen had been finding unaccountable caches of egg shells in corners. Captain Robert Scott finally uncovered the culprit, which was Skippy, the company's mascot. Seems that Skip had been filching the hen-fruit, carrying it to fire house and eating it.

Firemen decided to let Skip continue his swiped-egg-diet, but now when they discover the shells, they pay the grocer the few cents the meal would have cost, if Skip were an honest dog.

Answers Last Fire Alarm—Goes to Jail

Jerry O'Connor, aged 42, said to be "the maniac who has kept Bellevue Hospital (N. Y. City) in state of jitters for last year by turning in false alarms," a discharged member of the N. Y. F. D., was sentenced to six months in jail, after being caught sending in alarm at 1.35 one morning. Magistrate Aurelio said: "You are a horrible example of a fireman. I am going to take you out of circulation and give the Bellevue district a rest. A repetition of this offense, when you get out will bring a straight indeterminate term in the penitentiary." He had already served 130 days for the same offense.

Red Demon Takes Toll in Many Ways

Worenzo V. Guli, aged 56, died of injuries received when acetylene torch he was operating exploded in boiler shop of Tietjen & Lang drydock, Hoboken (N. J.). Two other men injured.

*

Henry Redfield, aged 35, fell alseep in a chair while smoking (N. Y. C.)—died from burns.

*

Eight-year-old Edward Hyatt tried to help father to beat out brush fire. So severely burned, he died, in spite of efforts of men on Pea River project (Alabama) who sold rattlesnake venom to earn money for his hospitalization.

*

In Brownsfield (Tex.) three children named Lindsay crawled under a tent seeking refuge from fire that swept tent home of their father, a cotton picker. Another Lindsay child, saved, said one of youngsters put match to quilt, starting fire.

*

In Gassaway (W. Va.) flaming cauldron of tar exploded, burning 20 school children, 14 of them seriously. They were watching workmen heat tar when metal drum exploded, scattering flaming stuff in every direction.

*

While father was using oil can to feed stove, in Timmins (Ont.) it exploded resulting in fatal burning or suffocation of five children. Home destroyed. Father's clothes burned off—firemen unable to save youngsters.

*

Mrs. Anna Manaton, aged 68, Greenport (L. I.) was critically burned when she poured water on blazing syrup which boiled over from a pot while she was canning fruit. House badly damaged by resulting fire.

*

Novella Jackson, aged 3, New Brunswick (N. J.) played with matches—died from burns.

*

In Crowley (La.) a cloud of butane gas crept along street until it found a fire. Resulting blast killed two persons, seriously injured four, wrecked number of homes and stores. Cause, defective valve in pipe line at filling station.

*

Fred Kluger, aged 25, Brooklyn (N. Y.) was killed and two others injured when a glass heating oven in plant of N. Y. Eye Protective Co. exploded. Cause—undetermined.

*

Wm. Peigelbeck, student at College of Agriculture, New Brunswick (N. J.) tried to clean engine of auto with gasoline. Severely burned as result.

*

Fiery boomerang shot in a pyrotechnic display in Hampton Beach (N. H.) described huge arc above holiday crowd of 1,000 and wrapped itself around neck of John Flynn, aged 31. Bystanders extinguished flames. Taken to hospital in critical condition.

*

Dynamite cap, in clenched right hand of 13-year old Roland Willeford, Mt. Holly (N. C.) exploded, blew off three fingers, set 5th grade students of school in panic.

*

Miss Sadie Lawson, aged 35, Winston-Salem (N. C.) said she didn't mean to burn her invalid mother to death, but she did. She admitted she poured gasoline on sick woman's bed, set it off "because her mother and she had quarreled." Cause was too much liquor.

The Month's "Tall Story"

Firemen of Lynnfield (our correspondent fails to give state) rushed to fight a fire in a barn. Stretching line from a canal nearly a half-mile distant, they found hose 100 ft. short. They solved (?) the problem by detaching 100-foot section from end of line nearest the barn and rushing it to the end nearest the canal. Were their faces red when they realized they'd merely transferred the shortage from one end of the line to the other! Barn burned, meanwhile, with 40 tons of baled hay.

News Flashes

One fireman, Thos. Sheehan, and two others were injured fighting a blaze in grocery store, Indianapolis, (Ind.). . . . Parishoners of Church of Immaculate Conception, Paincourt (near Chatham, Ont.) formed bucket brigade unsuccessfully attempted to save church, which burned with $100,000 loss. . . . When an explosion occurred at an oil pipe-line near Pryor (Okla.) six persons were burned to death, four women in one auto. . . . Six of eleven members of a tenant miner's family near Fairview (Ill.) were killed when powder keg, kept in home exploded. . . . Virgil Osterhout, Danbury (Conn), was killed when flue cleaning compound he was using in furnace fire box exploded. . . . Mrs. Laura Ciccone, aged 50, the Bronx (N. Y. City), succeeded in suicide by setting herself afire on a fire escape balcony. . . . Dozens of rabbits, scorched deep brown by flames, dashed madly over prairie in Bow River forest fire area near Cochrane (Alberta) leaping high in air as their pads touched hot baked ground. . . . When gasoline fire swept tugboat at Atlantic refining company near Port Arthur (Tex), crew was trapped below decks, two dying, five being injured.

What — No Bells?

According to Lieut. Thomas Magner, (Bridgeport (Conn.) F. D. they're no more bells on the apparatus floor of Bridgeport firehouses. Since adoption of "Talkalarm" system, Chief Thos. F. Burns has ordered removal of all primary and secondary bells from apparatus floor. Alarm comes in first over "Talkalarm" and then is sent in on the tape and register. Bells are still used in bunkrooms and dormitories.

'Nother Fish Story

Firemen of Aiken (S. C.) were much put out—and fire almost *not* put out—when water coming through hose they were operating suddenly dropped to a mere trickle. Disconnecting line they discovered a "catch" or small fish had been sucked into hose.

Note to contributors: If you do not read your news contribution in the next issue of FIRE ENGINEERING don't despair —if it's suitable it will ultimately find its way into print.

Editor, Watch Desk.

WHAT DO YOU KNOW?

The Editor of "The Watch Desk" welcomes contributions from readers of FIRE ENGINEERING that briefly give facts about interesting, odd things that have to do with fires, fire-fighting, etc. Address "Editor, Watch Desk."

WHAT'S BURNING

THE following list includes fires of $50,000 loss and over in the United States and Canada, for the month of February, 1937. These figures, compiled from the telegraphic reports, are based on estimates made at the time, and are subject to later investigations and consequent revision. Taken as a whole, however, they are an approximately correct view of the losses incurred. The figures represent loss in thousands of dollars.

Month Ending February 28

	Loss in Thousands of Dollars
Salem, Ohio—Office bldg. of Salem Engineering Co.	$ 50
Jamestown, N. Y.—Pearl City Feed Mills damaged	60
Holmen, Wis.—Sietteland building destroyed	50
Greenburg, Pa.—Welty apartment bldg. damaged	50
Cincinnati, Ohio—Furniture factory of Stille & Duhlmeier Co	170
Carrollton, Ky.—Richland Theatre building destroyed	70
Ansonia, Conn.—Terry building on Main Street, destroyed	170
Vancouver, B. C.—Lumber mill of Canadian White Pine Co.	100
Paducah, Ky.—Bradley Bros. grain elevator and adj. property	65
Louisville, Ky.—Bollinger-Hancock Co. bldg. and adj. property	50
Dearing, Ga.—Dearing high school bldg. destroyed	50
Hanover, N. H.—Eight business establishments damaged	180
St. Paul, Minn.—Business property at 1499-1509 University Ave.	50
Muskegon, Mich.—Grossman & Kline Dept. stores	325
Lake Providence, La.—Public school bldg. destroyed	70
Drumheller, Alta.—Vickers general store destroyed	80
Larchmont, N. Y.—Chatsworth Gardens apartments damaged	125
Cincinnati, Ohio—Bldg. occupied by Arthur W. Baehr Co.	100
Albany, N. Y.—Madison Avenue Reformed Church destroyed	80
Tunkhannock, Pa.—First M. E. Church destroyed	80
Harlingen, Tex.—Dredge of Atlas Construction Co., destroyed	80
Sault Ste. Marie, Mich.—Williams block damaged	50
Beatrice, Neb.—Beatrice mill and elevator of Black Bros.	125
Picher, Okla.—Lead ore mill destroyed	80
Watertown, N. Y.—Yards of Sullivan Lumber Co., destroyed	70
Eureka, Cal.—Business bldg. owned by Bank of America	50
Portland, Ore.—Furniture factory of B. P. John Corp.	50
Wheeling, W. Va.—Edgington laundry operated by the Home of the Good Shepherd	170
Highland Park, Mich.—Property of Briggs Mfg. Co.	170
Nashville, Tenn.—Storage building of Madison College	50
Carrollton, Ga.—4500 bales of cotton owned by Southeastern Whse & Compress Co.	250
Selma, Ala.—Masonic Temple destroyed	50
Vegreville, Alta.—Clement block destroyed	170
Pointe Aux Trembles, Que.—Roman Catholic Church destroyed	50
Saginaw, Mich.—Plant of Summers Bros. Appliance Co.	65
Aiken, S. C.—Commercial Hotel and adj. property	65
Douglas, Alaska—Mining town—virtually destroyed	200
Pictou, N. S.—Business property destroyed	80
Girardville, Pa.—Girard Theatre, owned by G. Hollister	80
Chicago, Ill.—Bldg. occupied by Blackstone Mfg. Co. and others	70
Detroit, Mich.—Ice house owned by Detroit City Ice & Fuel Co.	80
Grand Rapids, Mich.—Factory of Wolverine Die Casting Co.	50
Laurel, Miss.—Mill of Eastman Gardiner Co., destroyed	80
Ypsilanti, Mich.—First Baptist Church damaged	70
Springfield, Ill.—Plant of Hummer Mfg. Co., damaged	170
Alberni, B. C.—Indian Residential School destroyed	70
Dumas, Ark.—Plant of Stimpson Veneer & Lumber Co., 1 mi. south	80
Savannah, Ill.—Three story Law Bldg., adj. property	50
Detroit, Mich.—Bldg. of H. A. Davidson Lumber Co.	50
Chattahoochee, Fla.—Nurses quarters at Insane Hospital	80
Brooklyn, N. Y.—Bldg. occupied by Wise Shoe Co., adj. property	80

Fairfield Chiefs Discuss Fire Drill Schools

An interesting account of the work accomplished along the lines of drill schools for firemen was given before the regular meeting of the Fairfield County Fire Chiefs' Emergency Plan, by Assistant Chief Ernest Cox, Drillmaster of Millford, Conn. The meeting was held at the Fairfield Center Firehouse, Fairfield, Conn., on the evening of February 24, with a large attendance.

The Plan was welcomed by Fire Commissioner Van Holst, First Selectman Ferguson, Fire Commissioner Smith and Chief Carroll, of Fairfield.

Ex-Chief Beckerle, of Bridgeport, spoke in favor of a bill to be introduced in the Connecticut legislature to relieve drivers of fire apparatus from personal liability. It was moved and carried to support the bill, which is as follows:

"Every city and town shall be liable for, and shall assume the liability to the extent that it shall save harmless any policeman, fireman or volunteer fireman for the negligence of such policeman or fireman in the operation of police cars or fire apparatus upon public or private ways of such city or town, provided the policeman or fireman at the time of the accident, injury or damage complained of was acting in the performance of his duties and within the scope of his employment or services.

"No action instituted pursuant to the provisions of this section shall be prosecuted or maintained against any city or town and policeman and fireman until after a thirty day written demand upon the Treasurer of said city or town and his neglect to pay said claim within said time, nor shall said action be maintained against said city or town and policeman and fireman unless such action shall be commenced within one year after the cause of action therefor shall have accrued."

This bill, Chief Beckerle explained,

"will lift this responsibility from the drivers' shoulders and place it squarely where it belongs upon the municipality. The gist of the bill is provided in the first clause. The second clause simply relates to the details of procedure by a party plaintiff against a city or town and limitation of the action.

"It is important to understand that a municipality is not liable for the prosecution of a governmental duty, hence the liability of the driver as the law now stands. . . ."

Chief Cox, in speaking on the drill schools, said that it was hoped that the men instructed in the schools would return to their departments as instructors of the members. The drill tower of Millford was used in the instruction exercises. Such schools must, of necessity, be established in cities with drill towers. Pompier ladder work was taught to give the men confidence. Instruction in the use 20, 30 and 40 foot, extension and pole ladders was also given. The use of gas and smoke masks was also taught; laying of hose, with use of adapters, carrying hose up ladders, rescue of victims at fire, etc., were also part of instructions. He pointed out that ninety per cent of drilling could be done around the fire station, such as work with inhalator, first aid, instruction of men in knowing where tools are on apparatus, and so on. A rising vote of thanks was given the Chief at the conclusion of his address.

An account of the arrest and prosecution of an arson gang operating in Connecticut and Westchester County, N. Y., was given by a speaker. The methods adopted in effecting the apprehension of the criminals was interestingly described. This gang had been responsible for a number of serious fires in the section, with over half a million dollars damages. As it was requested that the name of the speaker be reserved, it is not given here.

After considerable discussion, it was decided to appoint a committee to confer with the Chiefs of New Haven County, with the object of forming a "Plan" in that county. On the invitation of Fire Commissioner Merwin, it was decided to meet at Shelton, Conn., on the evening of March 24. The following meeting will be held at Greenwich, Conn., on April 28. The May meeting will be the annual banquet.

Owing to the lateness of the hour, consideration of a number of questions in the "Question Box" was postponed until the next meeting. Refreshments were served by the local Fire Department.

City Service Ladder Truck Delivered to Old Town, Me.

An American-LaFrance city service ladder truck has been delivered to Old Town, Me. It has a booster pump and a 100-gallon booster tank. The apparatus has space for 1,000 feet of hose and carries 240 feet of trussed ladders. It is believed that with this unit, the last of the horse-drawn apparatus has been replaced in New England. Chief W. N. Hellenbrand is second from the left.

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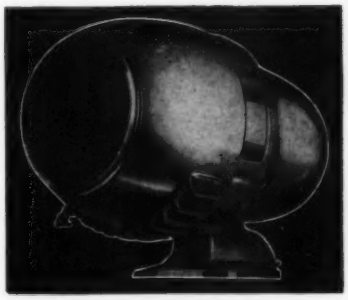

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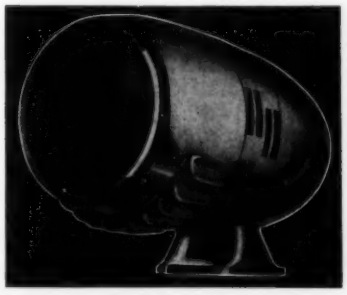

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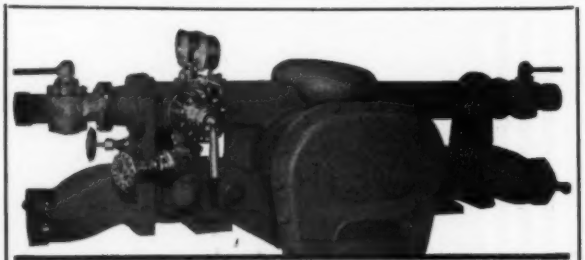

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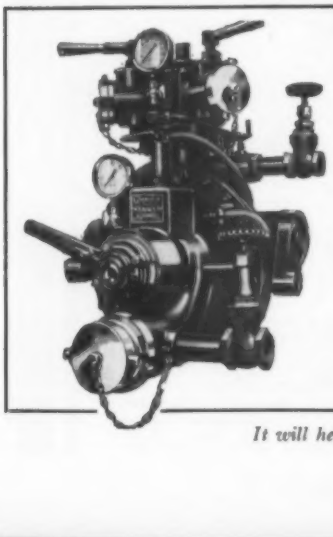

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Ex-Chief Patsy McCartin Dead

Patrick D. McCartin, who retired in 1931 as Chief of the Colorado Springs, Col., Fire Department, died following a short illness. He would have been seventy-five a month later.

He came to Colorado Springs from Pueblo in 1909, where he was Chief for four years. Before that he was fire warden in Milwaukee. He served as Chief of Colorado Springs for nearly twenty-two years.

The Late Chief Patsy McCartin

Before fighting fires in Milwaukee, he was a well-known lightweight boxer and had established a reputation from coast to coast.

$1,000,000 for Fireboat

Approval has been given for the expenditure of $1,000,000 for the construction of a fireboat for New York City, which when added to the cost of marine architects' fees previously appropriated, will bring the cost of the boat to $1,065,000.

The preliminary studies indicated that the proposed boat, because of the weight of machinery, will be considerably heavier than first anticipated, and therefore will require a larger displacement.

The hull will be designed for greater speed. There will be steel plates, so that the boat can be used for an ice breaker. It will have two rudders with duplicate control, air cooling and conditioning, air compressor for drill into concrete docks and other waterfront structures.

The boat will have two diesel engine driven generator sets, two main direct current generators and an excitor, and two propulsion motors. Each diesel engine will be of 1,200 horsepower at 720 r.p.m. The hull work will meet the specifications of the U. S. Steamboat Inspection Service.

The first fireboat, the William L. Strong, placed in service in 1898, cost $56,490, and the John J. Harvey, the last in line, was constructed at a cost of $607,260 and placed in service in 1931.

THE PUBLIC SHOULD BE EDUCATED, NOT SCARED, INTO FIRE PREVENTION

An Honest Effort to Show People the Real Benefits To Be Derived from Care and the Exercise of Common Sense Will Do Much Toward Making the Campaign a Success

By Robert L. Corey
Commissioner, Fire Department, Crystal Brook Park, L. I., N. Y.

WHY does Fire Prevention make so little headway? For many years I have followed with interest fire prevention campaigns throughout the country. The results of most of these have been negligible. Six years ago I had the same attitude that most citizens have towards fire prevention. During Fire Prevention Week, in common with a great many people, I cleaned my cellar, and removed a few obvious hazards. Why did I do it? For a long time I puzzled over this. Now, I believe that I did it because I was temporarily frightened into doing so.

You Cannot Frighten People Into Fire Prevention

Most campaigns make no honest effort to educate the people to the reasons and necessity, and the results that can be obtained from practising fire prevention. The one thought seems to be to scare the citizen into caution. But the human being is much like an ostrich, scare him enough and he will, figuratively speaking, bury his head in the sand. The spectacular never retains interest long, and that is the trouble today. Fire prevention campaigns are spectacular. Blazing red posters, lists of meaningless figures, blood curdling speeches and horrible stories form the largest part of the campaigns. In most of the cases where I have observed success, it has been the result of slow, educational processes and not spectacular exhibitions. The mere passing of laws does not always bring success. As a matter of fact, it often prejudices citizens against fire prevention, because they do not understand, and little effort has been made to make them understand the reasons for such laws.

I have spoken to literally hundreds of people about fire prevention. Most of them think something should be done about it but fail to see the part they can play in it. They have not been educated to appreciate the results attainable. Most campaigns seem, to them, to be run for two causes. One is so that insurance companies will have less losses, and the other, so that the Fire Department can make a good record.

Campaign Should Help the Citizen

The Fire Prevention Campaign should be conducted so that the citizen feels that the purpose of the campaign is to help him and that all other factors are secondary. Six years ago I was appointed the Chief of a Fire Department of a small summer colony on Long Island. Every year we had had two or three little fires, most of them in the woods. I took my appointment seriously and as there was no money available for equipment concentrated my attention on the study of fire prevention. To say that I was amazed to learn how easily fires could be prevented would be to put it mildly.

After I had obtained a slight working knowledge of the general principles, my next step was to see how I could apply those principles. I soon found that people resent being told that this is dangerous or that is dangerous. I went before the Board of Trustees and put my ideas before them, but made no headway. The ideas were fine, they admitted, but you cannot force people to follow these ideas.

Sent Letters to Home Owners

The following spring I decided to take up the matter personally with each resident. How to do it without offending them was a problem. Finally I decided to send letters to all home owners. In these letters I outlined the main causes of home fires and the action to be taken to prevent them. I explained that it costs very little to practice fire prevention in comparison with the benefits received. I also pointed out the hazards of burning leaves and brush without proper care. Previously as many as eight or ten families would burn off their leaves at one time. I showed them how, if a wind came up suddenly, all those fires might spread at once and nothing could save their homes. I recommended that all home owners report to the Superintendent, when they were going to burn leaves, so that at no time would more than one fire be going at a time.

No pressure, no musts, no horrible stories, just a simple statement of facts were contained in those letters. The letters further recommended the cleaning of chimneys, checking of electric fixtures and appliances, and the examination of heating and cooking appliances, at least once a year. Many citizens phoned me or stopped me on the road and asked me to look over their houses. The inspections were made free of charge and recommendations were made which did not in any way (as so many fire prevention campaigns hint) indicate that I thought the owner a low grade moron for not realizing the condition himself.

I gave the impression that I wanted to be of service and help the house owner and that that was the only purpose I had in mind. In four years we have had no fires during the summer season. The only fire that occurred took place in a house under construction during the winter. Fire officers laid the fire to carelessness of some tramp who had probably broken in.

Keeping the People Fire-Prevention Conscious

The next step to keep the people fire prevention conscious was also a prob-

lem. I finally decided to start a weekly newspaper, which I ran off on a duplicating machine. The paper covered all the local news, but in each issue was a short article on some phase of fire prevention. They were stuck away on page four or five. I knew that the residents read all the paper in order to keep up with the colony gossip. I also realized that if I made the fire prevention articles too prominent the people would, in a short time, realize my motives in printing the paper and thereby I would lose more than half the battle. Incidentally, I made a little money on the paper.

Why the Campaign Succeeded

I believe I can safely say that the campaign was successful. Even when I visit the people in their city homes they show me that they have carried the principles of fire prevention into their lives. I firmly believe that if I had carried on a campaign of terror (for that is what most fire prevention campaigns are) that I would not have made any headway. It is my belief that fire prevention should be stressed in the home. Many will no doubt disagree with me, but I believe that a man is more likely to carry into business what he has learned in the home, than he is to carry into the home what he has learned in business.

In short, my opinion is that you cannot scare people into action. You cannot make anybody do anything by telling them it will be good for them. You have to go out and sell the idea in a painless way, so as not to offend his pride.

Nozzle for Making Fog

Fireman Conrad Schwall and Lieut. Thomas Gustavino, of Engine Company 163, New York Fire Department, have developed a nozzle for making fog, to be used in fighting oil and smoky fires.

Deputy Chief John Spencer of Staten Island learned that the Standard Oil Company was considering the use of a fog nozzle. He gathered data on the subject, and worked with the two men in developing the nozzle that has been submitted to the New York Fire Department.

The nozzle is fitted with a ball in a cage. The ball is so arranged that it rides on a thrust ball bearing, mounted on the cage directly in front of the nozzle opening. The ball has a number of grooves. When the face of the ball is struck by the stream, the grooves cause the ball to spin, and in that way the stream is broken up into a fine mist.

It is claimed by Chief Spencer that this nozzle will use less water and will cover a much wider area than other types of nozzles.

Chief Kenlon's Son Dead

Walter J. Kenlon, President of the Kenlon Oil Company, New York City, and eldest son of John Kenlon, formerly Chief of the New York Fire Department, died on March 4 as the result of a heart attack at his home, Englewood Cliffs, N. J. He was forty-six years old.

Surviving him are his parents, and two brothers.

From 1914 to 1915 he was Eastern Sales Manager of the Ahrens-Fox Fire Engine Company. Following services overseas as a First Lieutenant, he became Sales Manager of the West Virginia and Pennsylvania Coal Company. He organized the Kenlon Oil Company in 1923.

Dangers of Explosive Solvents in Soybean Manufacture

Safety measures and devices for reducing the danger of explosions should be included in plans for building soybean oil extracting plants on farms and in rural communities, according to the Bureau of Chemistry and Soils of the U. S. Department of Agriculture. Vapors produced in using hexane and similar inflammable solvents in extracting oil from soybeans may be easily ignited and cause disastrous explosions.

The building of extracting plants is being considered in many rural communities, as this year's soybean crop is almost twice as large as last year's. A number of farm and rural community plants in the Middle West extract the oil from the beans and produce a meal for livestock. The oil is sold to manufacturers of paint, varnish, and other commercial products.

"As the soybean utilization industry is rather new in the United States, the explosion problem requires further study for the development of safety measures and devices," says Dr. David J. Price, in charge of the Chemical Engineering Division of the bureau. "Investigations in progress show that danger of explosions in soybean processing plants can be reduced, if certain safety measures are adopted.

"Storage tanks for inflammable solvents should be placed underground and outside of the extracting plant. All pipe connections should be made tight to prevent escape of explosive vapors. Each plant should have adequate ventilating equipment for removing the solvent fumes and vapors which might accumulate and form dangerous explosive mixtures during the extraction process.

"If steam is used in generating power for the plant the boiler room should be located at a safe distance from the extracting room. Hexane vapor—almost three times as heavy as air—settles toward the floor and can be readily ignited by flames in the fire box of the boiler.

"The plant should also be equipped with self-opening windows which prevent severe damage from explosions by venting the force of the explosion outside of the building."

Chemical engineers of the department also point out that dust explosion hazards may be created during the grinding and processing of soybeans. Soybean dust when mixed with air in proper proportions ignites easily and under certain conditions may cause a serious explosion. Samples tested by the Bureau of Chemistry and Soils indicate that dust from soybeans is just as much of an explosion hazard as dust from grain.

"Dust explosions are likely to follow the installation of new types of mechanical and electrical equipment," Doctor Price explained. "New manufacturing operations should be examined carefully for possible dust explosion hazards. Foreign materials should also be removed from the products being processed, closed storage bins provided, electrical equipment including incandecent lamps properly protected, static electricity controlled, and loose dust collected and removed. All possible precaution should be taken to prevent ignition of explosive dusts by lighted matches, open flames, and electric or metallic sparks."

Fireman Schwall Demonstrating the Fog Nozzle

Arson Ring Jailed

Two members of an arson gang, who pleaded guilty to setting fires in Philadelphia which caused $500,000 damage, were sentenced to from six months to six years. The Court commended Thomas McNitt, former Assistant Fire Marshal, for his work in breaking up the ring, which consisted of twelve members. Four others are awaiting trial.

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CENTRIFUGAL TYPE
FRONT-MOUNTED

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Thus with a Barton you are not limited to pumping from city hydrants. In fact, every day Barton Pumps—automatically primed—are called upon to fight country and suburban fires, delivering huge volumes of water at smashing pressures from ponds, cisterns, rivers, etc.

Any Barton Fire Pump can be completely installed on a standard truck WITHOUT A SINGLE CHASSIS CHANGE. A good mechanic can do the entire mounting job in a few hours—entire expense but a few dollars.

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SAFEST TO JUMP INTO

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CORY-PATTERSON MFG. CO.
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INCIPIENT FIRES

Damage by water and chemicals causes higher fire losses. If you are interested in reducing loss figures — try this. Use a LUX carbon-dioxide extinguisher to snuff out all incipient fires. LUX snow-and-gas is the fastest known extinguishing agent. And — most important — LUX is absolutely harmless. Let us send you the new descriptive booklet.
Killing fires with LUX extinguishers means fast action, no "extinguisher damage," no mess. Next time use LUX.

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2. 100% weatherproof protection. 3. Ball bearing motor capable of carrying 100% overload. 4. Rigid, durable and unit construction. 5. Perfectly dynamically balanced rotor of aluminum. 6. Fast pick-up—long roll. 7. Outside casing rustproof Armco Iron, 4 coats Red Duco.

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HILL FIRE APPARATUS **BELLS**

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EAST HAMPTON, CONN.
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THE modern pumping engine has many advantages, including better and more powerful motors—better transmissions—better axles—four-wheel brakes—better engineering and, finally, better pumps—far better if it carries a Hale pump.

HALE FIRE PUMPS CONSHOHOCKEN

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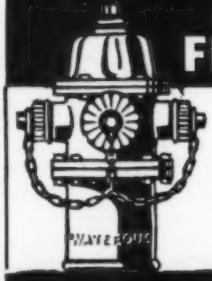
WATEROUS
COMPRESSION
FIRE HYDRANTS



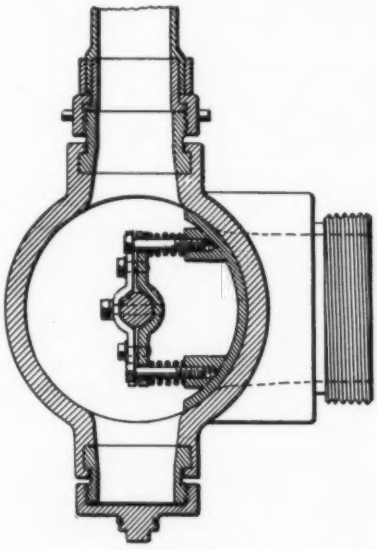
Waterous Dependable
ESTABLISHED 188\

WATEROUS COMPANY - ST. PAUL

New Hydrant Design

Capt. August H. Daviet, Hillside, N. J., has designed a shoe to fit inside a hydrant, whereby it will be possible to connect or disconnect a hydrant line without shutting off the flow of water to another outlet of the hydrant.

The design consists of a convex shoe attached to the center valve stem by means of a clamp. There are four springs to keep the shoe against the side of the hydrant. The shoe has enough



Cross Section of the Barrel, Showing the Shoe Against an Outlet

depth to cover any of the oulets. A quarter or half turn of the center stem in the direction indicated by the arrow on the hydrant cap will cause the shoe to cover any one of the desired outlets so that a line might be connected.

This design, for which a patent has been applied, is not applicable to all hydrants.

Capt. Daviet has been working on the idea for the past two years.

After-Holiday Hazards

The incident describing "After-Holiday Hazard," which appeared in the February issue, page 72, took place at Toronto, Ont., and not at Montreal.

McElligott Wants New Fire School

To meet conditions brought about by the three-platoon system, which will eventually add four thousand men to the department, Fire Commissioner John J. McElligott, New York City, is planning a new training school at the Fire College, Long Island City.

He said:

"Subject to acquiring the necessary funds, I am considering the erection of a drill tower, seventy-five feet high, which will be built so that it can be dismantled and used for exhibition purposes in other parts of the city. A tower of this size would be equivalent to a six-story building.

"The problem of greatest concern to me is the training of the large number of firemen, who will be appointed in order to install completely the three-platoon system. These men have no Fire Department experience whatsoever when they are appointed.

"The arrangement is far from satisfactory. Immediate steps should be taken to build a new probationary firemen's school to replace the present school, which is obsolete and not sufficiently large to provide training facilities for the large class of men which will be required, even after the three-platoon system is completed."

Commissioner McElligott reported that the two-way radio system between the fire alarm headquarters in Manhattan and the fleet of nine fire boats, is expected to be in operation by June 1.

Baltimore Apparatus Struck by Trolley

While making a transfer movement for a four-alarm fire, Engine 55 of Baltimore, Md., was struck by a street car, and one of the firemen was injured. During the past few years, several firemen have been killed by this type of accident.

In most cases, the motorman's defense is that he did not hear the exhaust whistle or bell.

OTIS SMITH.

Box 52 Inspects Exchange

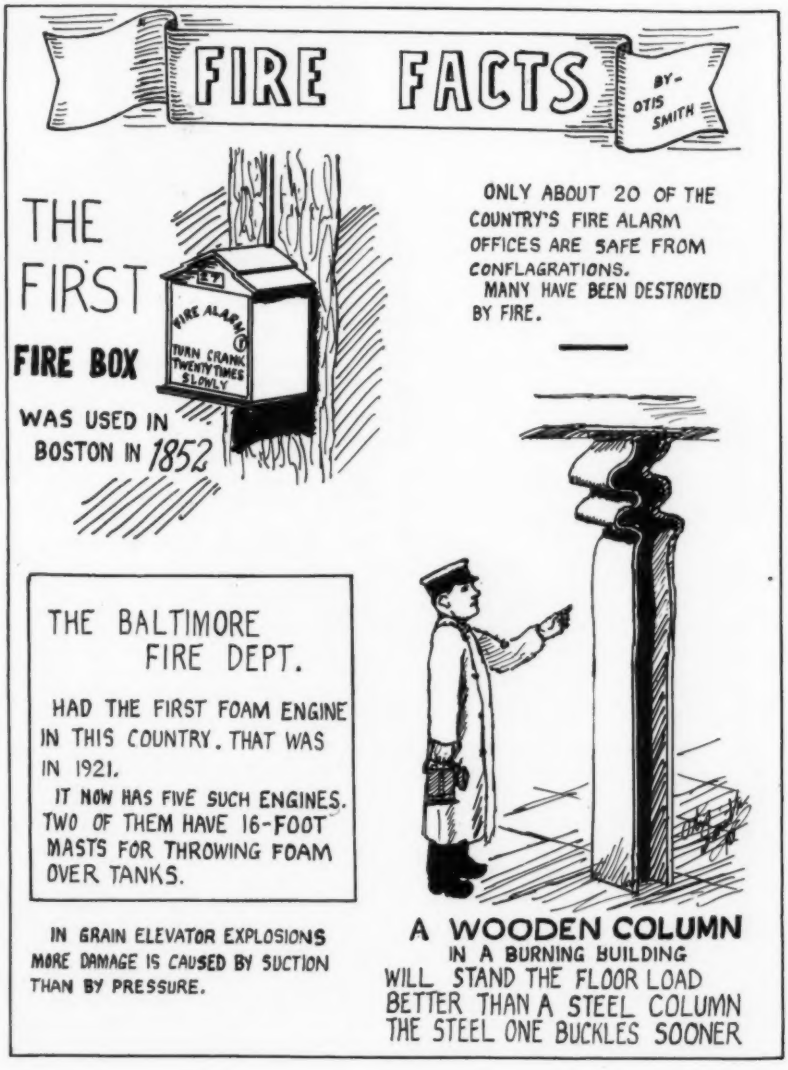
On February 17 the Box 52 Association, of Boston, held a meeting and inspection tour at the Bowdoin Square Building of the New England Telephone and Telegraph Company. Motion pictures of the development and extension of telephonic communication were shown. There was a large attendance of members and guests. President P. Hildreth Parker and Secretary C. Elmer Cane were in charge of the arrangements.

Chief H. W. Breder Dead

Henry W. Breder, Chief of the Egg Harbor, N. J., Fire Department, since 1899, and since 1925, president of the Atlantic County Firemen's Association, died at his home on February 28, as the result of pneumonia. He was sixty-nine years old.

Chief Breder was very active in the New Jersey Fire Chiefs' Association.

He is survived by his widow, a daughter and a son.


FIRE FACTS
BY- OTIS SMITH
THE FIRST
FIRE BOX
WAS USED IN BOSTON IN 1852
FIRE ALARM
TURN CRANK TWENTY TIMES SLOWLY
ONLY ABOUT 20 OF THE COUNTRY'S FIRE ALARM OFFICES ARE SAFE FROM CONFLAGRATIONS.
MANY HAVE BEEN DESTROYED BY FIRE.
THE BALTIMORE FIRE DEPT.
HAD THE FIRST FOAM ENGINE IN THIS COUNTRY. THAT WAS IN 1921.
IT NOW HAS FIVE SUCH ENGINES. TWO OF THEM HAVE 16-FOOT MASTS FOR THROWING FOAM OVER TANKS.
IN GRAIN ELEVATOR EXPLOSIONS MORE DAMAGE IS CAUSED BY SUCTION THAN BY PRESSURE.
A WOODEN COLUMN
IN A BURNING BUILDING
WILL STAND THE FLOOR LOAD BETTER THAN A STEEL COLUMN
THE STEEL ONE BUCKLES SOONER

CONVENTION DATES

March 17—FIRE CHIEFS' EMERGENCY PLAN. Regular Meetings, Eastchester, N. Y. Secretary, Captain Walter M. Dawkins, Box 341, Port Chester, N. Y.

March 18—NEW JERSEY MUTUAL SIGNAL ASSOCIATION. Meeting at Executive and Sales Offices, American District Telegraph Company, 155 Sixth Ave., New York City. Corresponding Secretary, Alexander A. Sullivan, Fire Headquarters, Bayonne, N. J.

March 24 — FAIRFIELD COUNTY FIRE CHIEFS' EMERGENCY PLAN. Regular Meeting, Shelton, Conn. Secretary, Lieut. John Moehring, Toms Road, Stamford, Conn.

April 26-29—JOINT MEETING MISSOURI VALLEY FIRE CHIEFS ASSOCIATION, KANSAS FIRE CHIEFS' AND FIREMEN'S ASSOCIATIONS. Missouri Valley, 3rd; Kansas Chiefs', 21st, and Kansas Firemen, 50th Annual Conventions, Hutchinson, Kan. Secretary-Treasurer, Missouri Valley, Chief Ray Tiller, Waterloo, Ia.; Kansas Associations, Chief K. D. Doyle, Wamego, Kan.

April 28—FAIRFIELD COUNTY FIRE CHIEFS' EMERGENCY PLAN. Regular Meeting, Greenwich, Conn. Secretary, Lieut. John Moehring, Toms Road, Stamford, Conn.

May 10-14—NATIONAL FIRE PROTECTION ASSOCIATION. 41st Annual Meeting, Congress Hotel, Chicago, Ill. Managing Director, Franklin H. Wentworth, 60 Batterymarch Street, Boston, Mass.

May 24-26—NEW MEXICO STATE FIREMEN'S ASSOCIATION. 15th Annual Convention, and Fire School, Clayton, N. M. Secretary-Treasurer, Theodore A. Rosenwald, Albuquerque, N. M.

June 3-5—EASTERN ASSOCIATION OF FIRE CHIEFS. 10th Annual Convention, Mayflower Hotel, Washington, D. C. Secretary, Chief Charles E. Clark, Wayne, Pa.

June 15-16—NORTH DAKOTA STATE FIREMEN'S ASSOCIATION. 53rd Annual Convention, Walhalla, N. D. Secretary, Heinie Hamptman, Bismarck, N. D.

June 15-18—ILLINOIS ANNUAL FIRE COLLEGE. 13th Annual College, University of Illinois, Urbana. Director, Prof. L. H. Provine, of the University; Secretary, Asst. Chief Roy W. Alsip, Champaign, Ill.

June 22-24—NEW ENGLAND ASSOCIATION OF FIRE CHIEFS. 15th Annual Convention, The Balsams, Dixville Notch, N. H. Secretary-Treasurer, Chief John W. O'Hearn, Watertown, Mass. Chairman, Exhibit Committee, Chief Albert C. Melendy, Nashua, N. H.

June 23-25—MARYLAND STATE FIREMEN'S ASSOCIATION. 45th Annual Convention, Easton, Md. Secretary, George R. Lindsay, Hagerstown, Md. Chairman, Exhibit Committee, J. M. Van Buren, Easton, Md.

July 6-9—PROVINCE OF QUEBEC POLICE AND FIRE CHIEFS ASSOCIATION. 5th Annual Convention, Rivière du Loup, Que. Secretary-Treasurer, Robert Harrington, Chief, Fire Department, McColl-Frontenac Oil Co., Ltd., Suite 8, Windsor Hotel, Montreal, Que.

July 13-14—MARITIME FIRE CHIEFS' ASSOCIATION. 23rd Annual Convention, Charlottetown, Prince Edward Island. Secretary-Treasurer, George P. Ryder, St. Stephen, N. B.

Aug. 3-5—WISCONSIN PAID FIREMEN'S ASSOCIATION. 30th Annual Convention, Wisconsin Rapids, Wis. Secretary-Treasurer, William H. Schultz, Sheboygan, Wis.

Aug. 5-7—MONTANA STATE FIREMEN'S ASSOCIATION. 46th Annual Convention, Anaconda, Mont. Secretary, Robert J. Thorburn, Billings, Mont.

Aug. 24-26—DOMINION ASSOCIATION OF FIRE CHIEFS. 29th Annual Convention, Oshawa, Ont., Can. Secretary-Treasurer, Chief James Armstrong, Box 56, Kingston, Ont.

Sept. 7-9—MARYLAND FIRE COLLEGE. 8th Annual Fire College, University of Maryland, College Park, Md. Director, Prof. S. S. Steinberg, Dean, Engineering College; Assistant Director, T. W. Venemann, Maryland State Firemen's Association; Secretary, G. F. Pollock, President's Office, University of Maryland.

Sept. 14-15—IOWA FIREMEN'S ASSOCIATION. 60th Annual Convention, Atlantic, Ia. Secretary, Paul A. Soener, Independence, Ia.

Oct. 5-7—FIREMEN'S ASSOCIATION OF THE STATE OF PENNSYLVANIA. 58th Annual Convention, Philadelphia, Pa. Secretary, Chief Charles E. Clark, Box 217, Wayne, Pa.

Oct. 12-14—ILLINOIS FIREMEN'S ASSOCIATION. 50th (Golden Anniversary) Convention, Danville, Ill. Secretary, Assistant Chief Roy W. Alsip, Champaign, Ill.

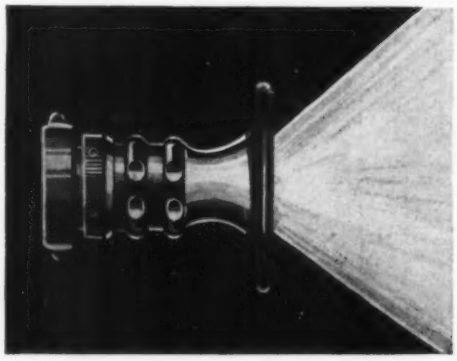
Oct. 19-22—INTERNATIONAL ASSOCIATION OF FIRE CHIEFS. 65th Annual Conference, Headquarters, Biltmore Hotel, and Exhibits and Sessions, New Municipal Auditorium, Oklahoma City, Okla. Secretary-Treasurer, Ex-Chief James J. Mulcahey, 16 Franklin Ave., Yonkers, N. Y.; Chairman, Exhibits, Chief Ray Tiller, Waterloo, Ia.

Aug. 30-Sept. 2—NATIONAL MUNICIPAL SIGNAL ASSOCIATION. 42nd Annual Convention, Hotel Statler, Cleveland, Ohio. Secretary-Treasurer, W. H. Harth, City Hall, Columbia, S. C.

Manufacturers' Announcements

Elkhart Mystery Nozzle

A nozzle, termed the Mystery Nozzle, has been developed by the Elkhart Brass Manufacturing Company, Elkhart, Ind. By turning the discharge barrel, the nozzleman can secure a solid stream,



Fog Being Discharged from Mystery Nozzle

a complete fog discharge, or any degree of fog desired. It functions from a complete shut-off nozzle to 160 degrees of fog.

The fog nozzle has been successful in fighting certain types of oil fires, and when used in residence fires, has cut down the water damage.

Fog Extinguishes Plane Fire

A wrecked tri-motor transport plane, saturated with gasoline and with the highly inflammable "dope" used for wings, was set afire for the tests at Rockwell Field, U. S. Naval Air Station, North Island, San Diego, Cal. Using two types of "Fognozis," Capt. S. D. Hogan, of the Los Angeles Fire Department, and a blue jacket from the air station Fire Department put the fire out in less than a minute's time.

A dummy placed in the pilot's compartment was removed by two bluejackets within half a minute of the time the water was turned on. The men reported that they were unhampered by heat although ordinarily the metal work would be so hot from a fire of this kind that it could not be touched for a long time, even of the men were able to face the heat from the flames.

Through an odd coincidence, two other planes were damaged by fire about an hour before this test was made. The planes, two amphibians, caught fire in the hangar, the wing fabrics being destroyed before the sailors put out the fire with chemicals.

After the plane tests, a pool of about 100 gallons of airplane "dope" was set afire and extinguished even more quickly than the plane fire and with use of only a single "Fognozl."

The nozzles produce a solid mass of fog, which not only protects the firemen, but also absorbs heat and extinguishes the fire. In the plane tests a "Fognozl" with both fog and solid-stream outlets was used, also a Type B "Fognozl," with 10-foot applicator. This latter type permits reaching out and over a flame, also into second story rooms and attics.

Mine Safety Forms Canadian Company

The Mine Safety Appliances Company, of Pittsburgh, Pa., announced the formation of the Mine Safety Appliances Company of Canada, Ltd., a new company, which took over the personnel and business of the Safety Department of Drummond, McCall & Co., Ltd., of Montreal, Quebec, well known dealers in iron, steel and non-ferrous metals for the past fifty years. The Safety Department of Drummond-McCall had been the agent for the Mine Safety Appliances Company since 1918.

The new company, which is located at 802 Railway Exchange Building, 637 Craig Street, West, Montreal, P. Q., is in charge of R. Morris, former Manager of the Safety Division of Drummond-McCall & Co., Ltd. Mr. McCall will represent the new company in Nova Scotia, with office and warehouse at New Glasgow. Complete stocks of MSA safety equipment will be carried at Montreal, P. Q., and New Glasgow, Nova Scotia.

Ex-Chief Hurd Dead

G. Walter Hurd, a member of the Oldtown, Me., Fire Department for twenty-eight years and Chief for twelve years, died at the age of sixty-one. He was a member of the Maine Fire Chiefs' Association, New England Association of Fire Chiefs, and was also President of Oldtown Firemen's Relief Association.

Massachusetts Chiefs Meet

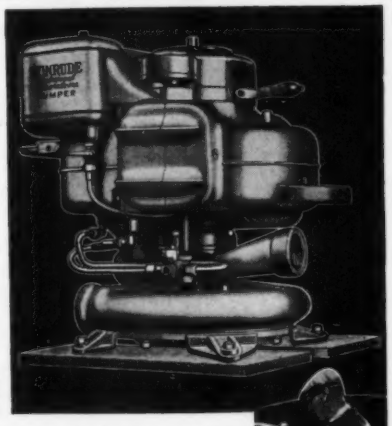
James J. McDevitt, of the General Fire Adjustment Bureau of Massachusetts, was the guest speaker at the luncheon meeting of the Fire Chiefs' Club of Massachusetts, which was held in the Parker House, Boston, on February 17.

Chief Charles L. McCarthy, of Worcester, presided, assisted by the Secretary, Chief William H. Hill, of Belmont. Two former Chiefs of the Boston Fire Department were present. Ex-Chief Peter E. Walsh and Ex-Chief Daniel F. Sennott.

The March meeting will be held at the plant of the Rockwood Sprinkler Company, Worcester.

HARRY BELKNAP.

UP TO
154 Gals. per Min.
UP TO
150 Lbs. Pressure



FIRE FIGHTING

High capacity with high pressure. Write today for complete performance tables and specifications on this newest type, smooth running, four cylinder Evinrude Fire Fighter. Develops 9.2 H.P. at 4000 R.P.M. Latest, modern, hooded power type motor. Sand and other foreign substances handled without wear by simple, non-friction, centrifugal pump of exclusive Evinrude design. Write EVINRUDE, 4587 N. 27th St., Milwaukee, Wis.

EVINRUDE HIGH PRESSURE **PUMPER**

UNION MADE

Signal FIREMEN'S UNIFORM **SHIRTS**

Styled Right—Priced Right

Cut full and roomy. Guaranteed not to shrink. Choice of medium blue, heavy fine yarn, fast-color sanforized chambray or navy blue tub-test percale. Two popular styles, Soft Collar Attached or Neckband with two Detachable Collars.

SPECIAL OFFER
To Fire Chiefs

If you are interested in a standardized uniform shirt for your department and your dealer cannot supply Signals, write us. Give us size and style preferred and we will submit a sample shirt prepaid for your inspection and quote prices.

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AS originators of FOGNOZLS, invented and designed by Chief Glenn G. Griswold of the Los Angeles Fire Department we wish to clarify certain points relative to this type of nozzle.

There is only *one* FOGNOZL, the Griswold FOGNOZL. It is protected by patents covering the impingement of two or more high-velocity streams of water *outside the nozzle*. As all fire engineers know, any other method of creating fog mass with a nozzle is contrary to the laws of hydraulics.

The claims granted in our patents and trade marks are very broad. We will protect these against any infringement and will prosecute not only the manufacturer but also the user of any fire fighting equipment which we think is infringing on our patents.

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1. *It produces a solid mass of fog, not a cone, spray, or mist.*
2. *It reduces water-damage to a minimum.*
3. *It does not agitate burning surfaces.*
4. *It protects firemen.*
5. *It controls and extinguishes gasoline fires.*
6. *It conserves water.*
7. *It operates under ordinary fire-fighting pressures.*
8. *It is available in over-shot or applicator type.*
9. *It is furnished in various combinations of Fog and straight stream with shut-off.*
10. *It has no moving parts.*
11. *It is not an experiment. It is proved by use.*

IT IS A FIRE NOZZLE—NOT A TRICK NOZZLE!

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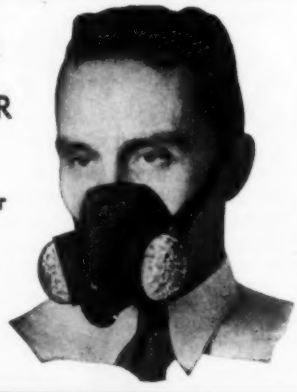

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Westchester Chiefs Addressed by Chief Spencer

Deputy Chief John Spencer, in charge of the Eighth Division of the New York Fire Department (Borough of Richmond) was the principal speaker at the February meeting of the Fire Chiefs' Emergency Plan. This was held at Fire Headquarters, White Plains, N. Y., on Wednesday evening, February 17, with an attendance of 107. The members were welcomed by Chief Griffin, of White Plains. There were five new members elected.

Deputy Chief John Spencer
New York Fire Department

Chief John Brennan, Pelham Manor, introduced Chief Spencer, who spoke at length on the subject of "Brush Fires." He said that brush and oil fires were the greatest problems of the Staten Island fire fighters. He told of some notable brush fires, especially that in the vicinity of Los Angeles, Cal., in which a number of the fire fighters were trapped on the side of a hill, with heavy loss of life.

Chief Spencer cited statistics, which showed that there were last year in Manhattan, Bronx and Richmond, 5,000 brush fires, and in Brooklyn and Queens, 3,482. He called attention to the fact that if, after a permit had been granted to anyone to burn brush and the fire should get beyond control and destroy other property, the city would be liable. Do not, he said, fight brush fires from the front, as the wind will ignite the brush as quickly as it is extinguished. Fight it from the lee flank, and drive it toward a creek or roadway. The Chief discussed many types of brush fires. Bog fires will burn for days underground. He told of a plan to place the nozzle under the earth, which will quickly extinguished the blaze. Crown fires, which burn at the top of the trees, spread rapidly on account of the generation of hot gases. They must be fought from the top.

Two 2,000-gal. flushing machines, belonging to the Sanitation Department, are utilized as reservoirs for the fighting of fires in brush. Diesel oil is used to destroy vegetation at the roadside. A portable telephone is used to communicate with headquarters, being hooked into terminals at fire boxes.

At the conclusion of the address, the Chief distributed a number of photographs, illustrating various points treated in his talk. He also showed a sample of a spray nozzle invented by himself, and a chart showing a plan of numbering houses, where streets are crooked or involved, as in a residential park. There was considerable discussion of the address and at its conclusion, Chief Spencer was elected an Honorary Member.

A large fire in the upper floors of an apartment house in Larchmont on the morning of February 17 was discussed, and it was considered that it showed the excellent working of the Emergency Plan in arranging outside assistance at fires that are beyond the capacity of the local department.

On invitation of Chief Arthur Steuhl, the next meeting was set for Wednesday, March 17, at Eastchester Township. Refreshments were served by the White Plains department.

Cincinnati Sends Aid to Delhi

A nun, awakened in the middle of the night to receive a cablegram, detected smoke, and sounded an alarm for a fire which demolished a three-story building in the rear of the College of Mt. St. Joseph-on-the-Ohio, Delhi Township. The volunteer department of Delhi, in command of Chief Joseph F. Lampe, found upon arrival, that the fire had gained considerable headway.

Chief Barney Houston, Cincinnati, sent two engine companies and a ladder company. The Cincinnati Fire Underwriters sent a salvage car.

The local department remained at the fire for eleven hours. The fire was stopped before it gained entrance to the chapel and altar, which contained a number of priceless relics. Chief Lampe believes that if it weren't for drills, the loss in the institution would have been greater. The damage was set at $100,000.

Durham May Have 2-Platoon

Only the question of funds stands in the way for Durham, N. C., to establish a two-platoon system. Chief Frank Bennett and City Manager Yancey favor the plan.

At present local firemen are on duty three full days and are off the fourth day.

Association Loses Banners

Two banners for use at the meetings of the Fire Chiefs' Emergency Plan of Westchester County, N. Y., one in the form of an American flag and the other showing the insignia of the Plan, disappeared at the meeting held at Larchmont last June and have never been recovered.

The officers of the Plan would greatly appreciate any information leading to the recovery of the banners. Deputy Chief Roi B. Wooley, Larchmont, N. Y., is President of the Plan and Captain Walter M. Dawkins, P. O. Box 341, Port Chester, N. Y., is Secretary.

Pay for Conventions

The Commonwealth of Massachusetts has a law (Chapter 40, Section 5, Paragraph 34 of General Laws of Massachusetts, 1932) which permits a Chief to attend a convention either in or outside of the state, at the expense of the city. The section reads:

". . . For the necessary expenses of municipal officers and employees of any particular department incurred outside the commonwealth in securing information upon matters in which the city or town is interested, or which may tend to improve the service in such department, if such appropriation is specified to be and is limited to such expenses incurred as aforesaid. Such expenses may also be incurred anywhere within the commonwealth and in such case shall be chargeable against any appropriation made for the ordinary maintenance of the department incurring the same.

Crippled Children Taken for Ride by Department

A group of youngsters, patients in the crippled children's ward of St. Mary's Gates Memorial Hospital, Port Arthur, Tex., realized a childhood ambition. Through the courtesy of Chief Dave Rachal, the children, accompanied by a nurse, were taken for a ride through the city on a fire apparatus. The department is now making plans to entertain the convention of Texas Fire Chiefs and Fire Marshals' Association that is to meet in Port Arthur, June 8-10.

FIRE PREVENTION MEN CONSIDER HAZARDS OF FLOATING OIL TANKS

Recent Floods Which Upset and Carried Oil Tanks from Their Foundations, Shows Need for Better Protection

SERIOUS concern on the part of public safety officials, the oil industry and the stock company fire insurance interests over the danger of oil storage tanks in the flooded regions of the Ohio and Mississippi River valleys, and the need of effecting proper safeguards brought about a meeting sponsored by the National Board of Fire Underwriters.

Those Present at Meeting

Those present at the meeting on February 10 included: W. R. Boyd, Executive Vice President, American Petroleum Institute, and other oil industry representatives; Chief D. B. Tierney, Vice President of the International Association of Fire Chiefs, Fire Commissioner John J. McElligott of New York City, and representatives of the stock company fire insurance business.

In opening the meeting Mr. Mallalieu of The National Board of Fire Underwriters made the following statement:

"We have received numerous expressions of concern over the situation brought about in the flooded regions of the Ohio and Mississippi River valleys due to oil storage tanks floated from their foundations and in some instances oil escaping to the surface through broken pipe connections. Undoubtedly everyone present is familiar with the extensive oil fire which occurred at Cincinnati due to this cause.

"While it is only natural that public safety officials and those interests having heavy financial investments in flooded territories should be apprehensive, it has been our thought that any safeguards that might be drawn to minimize this hazard should be tempered with sound judgment and reason. We believe that this is of the utmost importance because oil, the commodity with which we are dealing, is highly essential, and whatever requirements for safety that may be drawn should take into consideration those aspects of the problem which relate to the economic features of oil storage and distribution. Further, it is our thought that we should view a companion industry as an unfortunate neighbor whose plight has been brought about by conditions over which he has had no control. In other words, we do not believe that advantage should be taken of this opportunity to impose upon the oil industry harsh and arbitrary requirements untempered by the judgment and reason previously mentioned.

Problem a Mutual One

"It has been our thought that by sitting around this conference table we might view this as a mutual problem and endeavor to provide for the formation of such requirements for safety as might serve as emergency measures in regions not as yet affected by the flood and also as preventive measures on future occasions. Today's meeting has been called for this single purpose."

Joint Committee Appointed

As a result of this meeting the following joint committee was appointed by Mr. Mallalieu:

Representing the American Petroleum Institute: D. V. Stroop, C. E. Townsend, C. H. Bunn, Jr., F. A. Epps, C. D. Norris.

Representing the International Association of Fire Chiefs: R. A. Bogan, D. B. Tierney, J. J. McElligott, B. J. Houston, Fred Shepperd.

Representing the National Board of Fire Underwriters: H. E. Newell, to serve as Chairman, E. J. Smith, M. C. Brown, C. W. Johnson, J. W. Moffatt.

This committee will meet at an early date for the purpose of making a factual investigation of the action of oil storage tanks under the abnormal flood conditions, and to formulate recommendations for emergency remedial measures.

Soldiers Receive Training in Fighting Fires

Soldiers at the Aldershot Camp, England, members of the fire brigade, receive special instruction in fighting fires. The brigade station is manned by soldiers from the different units. Each unit has its own appliances. The men go through drills as part of their training. The members of the units fight small fires until the arrival of apparatus from headquarters. Here soldier-firemen are being instructed in smoke helmet work.

Chief H. W. Breder Dead

Henry W. Breder, Chief of the Egg Harbor, N. J., Fire Department, since 1899, and since 1925 President of the Atlantic County Firemen's Association, died at his home on February 28 as the result of pneumonia. He was sixty-nine years old.

Chief Breder was very active in the New Jersey Fire Chiefs' Association.

He is survived by his widow, a daughter and a son.

19 Cent Per Capita Loss

Chief George Haggerty, Berkeley, Cal., reports a per capita fire loss for the fiscal year of nineteen cents, and a loss for the calendar year of fourteen cents. The fiscal year ends in June.

In the period from 1911 to date, the high loss was in 1922, when the total loss was $251,405 for a population of 69,000. In 1936, with a population of 96,000, the total fire loss was but $13,490.

Chemicals Cause 4-Alarm Fire

Believed to have been started by an explosion of chemicals, a fire swept through a 90-foot business block of St. Paul, Minn., and caused more than $50,000 damage. The occupancies involved included a chemical company, cosmetic company, cigar company, and a manufacturer of automotive parts.

The first alarm was received shortly after 6 p.m. When firemen arrived, the entire building was involved. Fire was under control five hours later.

Turlock, Cal. Chief, Elected for Fifteenth Time

Charles V. Lundahl has been elected Chief of the Turlock, Cal., Fire Department for the fifteenth consecutive year. At the annual meeting of the department Chief Lundahl and the other officers were relected unanimously. These include: George S. Kieth, Assistant Chief; L. Cunningham, First Captain; Phil Lundquist, Second Captain, and H. M. Wallin, Ladder Captain. Russell Crookham is Secretary of the department.

AFTER all, a good badge is a sensible investment. Not everyone can wear a fireman's emblem of service. You men who have devoted your lives to saving life and property should be proud of your badge.

You will be if you wear a BRAXMAR BADGE. Over fifty-five years of experience goes into every badge you buy.

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REPLACE YOUR OLD COAT
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MIDWESTERN
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Treat Yourself to a Midwestern Coat—Now

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The hose with an unsurpassed reputation for QUALITY and SERVICE that has made it the STANDARD OF THE WEST for over 25 years.

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FALSE ALARMS

—Drawing by "Art" Espey

Suggested Future Equipment for Firemen in Flood Areas

NOTHING TO LOSE

The Chief was a studious man. He had to be. He won promotion after promotion as the result of being high man at the respective examinations, and the high rating was obtained as the result of consistent study.

One day he thought he would impress on his grandson the value and importance of study.

Shaking his finger at the boy, he said: "Remember, my boy, it will pay you to be diligent in your studies. Remember, too, what you have learned no one can ever take from you."

The boy nodded understandingly.

"Well," replied the boy, "they can't take from me what I haven't learned, either, can they?"

NO HARM DONE

He was a volunteer fireman. In the course of his evening duties about the house, he went down the cellar and noticed flames near the furnace. He rushed upstairs, grabbed his wife and child, rushed them off to a neighbor a block away, returned to the house, and called up the volunteer Fire Department.

He took another look at the cellar. The fire was still there. But there was no smoke. He went down to investigate. He saw the door of the furnace ajar, and the flames reflected on the cellar wall. He waited for the boys to come, and thought of how he would be the laughing stock of the company.

Another thought came to him. He called up the fire house, explained his story and told the fellow on the phone not to have the boys come.

The fellow at the station took the information rather calmly.

"Oh, that's all right. We weren't coming anyway. We couldn't get enough of the boys together."

ADJUSTMENT

The newly married fireman was explaining to the old smoke eater at the house, his experiences as a married man.

"My wife likes tea for breakfast, while I like coffee."

In quite a knowing way, the old fellow advised, "You'll soon get used to tea."

THE EVIDENCE

Down came Murphy from the bunk room, very much excited.

He said good and loud, "Some one has taken some money from my pocket. I think it's Gerrity."

The man nearest him, thinking he could calm him, remarked:

"How can you say that? It might have been me."

"Oh no, sir. It couldn't have been you. There was some money left."

ACCOMMODATING

He had to have some girl to take to the dance. Unlike most of the men at the county meeting, he was new and did not know many people. As a final resort, he dated up the waitress at the hotel.

In true gentlemanly fashion he took her home. He hated to leave.

He remarked, "I haven't the cheek to kiss you."

"Oh, that's all right," said she, "use mine."

Frequent water drinking prevents you from becoming stiff in the joints, may be good medical advice. But the fellows at the alarm headquarters have found out that some of the joints don't serve water.

—Drawing by "Art" Espey

The Axeman: "Listen to his Nibs tootin' his horn. That's probably how he got them trumpets on his hat."

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As a reader of FIRE ENGINEERING you are entitled to our buyers' information service free of cost. Here is how it works.

Whenever you are seeking information about any piece of equipment or material that you are planning to buy, first look through the advertisements in this issue. They are your best guide.

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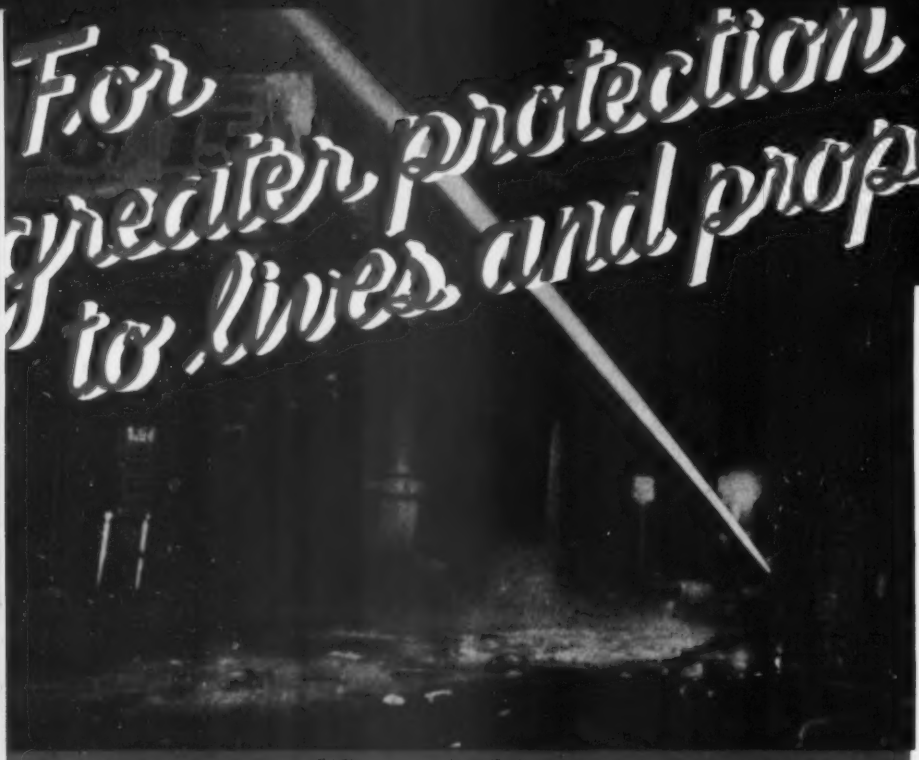

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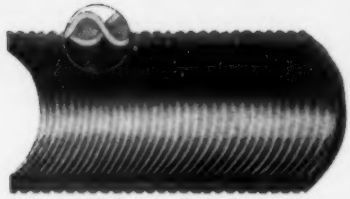
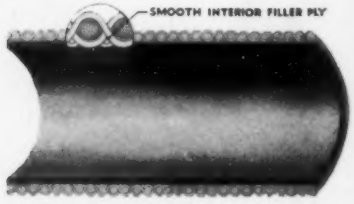


• In the ordinary type of fire hose there is no Smooth-Interior Filler-Ply to fill the valleys in the weave of the inner jacket. As a result, when the hose is subjected to hydraulic pressure, the rubber lining is forced back into these valleys, giving the interior of the hose a corrugated or "washboarded" waterway. The "wash board" condition causes excessive friction loss.



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